Lumleian Lectures
ON
INFLAMMATION.

Delivered before the Royal College of Physicians, in March, 1882,

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LECTURE II.
ETIOLOGY OF INFLAMMATION.

MR. PRESIDENT, FELLOWS, AND GENTLEMEN,—In the last lecture I endeavoured to show that if we take the word inflammation to mean what it has always meant—namely, an acute local disorder in which the affected part is hot, red, and swollen, we can account for the concurrence of these objective changes completely, on the theory that they are the direct physiological effects of injury—the ground for this view being the observation that by acting on an organ in such a way as merely to depress or impair its vitality, without destroying its texture, or otherwise interfering with its continuity with surrounding parts, we induce in that organ a state of things which, although not inflammation, is so immediately related to it, that out of it, without any intervening process of development, inflammation at once declares itself. For what I attempted to show in my last lecture was that it is possible, under favourable circumstances, for an inflammation to come into existence *d'emblée;* that in general its development is gradual, dependent on the gradual action or the gradual extension or dissemination of the cause; but if the cause is of such a nature that it damages a considerable area at once and in the same degree, as when for a time you cut off the circulation from an external organ, or subject it to the action of a high temperature, the physiological effect follows directly on the injury. What we saw in the ear of the rabbit was this. Immediately after it had been exposed to a temperature just high enough to spoil its tissues, there was no visible effect whatever; its circulation was normal, and no sign existed that it had been injured, but soon afterwards it became hot, œdematous, and congested. The invisible change of which these physiological phenomena were the inevitable consequences may be conveniently labeled *damage*, it being understood that we mean by it the state of things which immediately precedes inflammation, whatever be the nature of the agent that produces it. I am well aware that so simple a conception of the origin and essence of a pathological process is, by reason of its very simplicity, extremely difficult to seize upon; for inflammation is itself so positive a thing, and we are so accustomed to think of it in connexion with ideas of excessive action, that it is very hard indeed to reconcile the mind to regard its phenomena not as outward signs of an inward process, not as visible indications of disordered function, but merely as the expressions of loss and failure.

The question with which I have to deal to-day lies behind the one which was discussed last Friday. It is involved in it and involves it. In saying that the immediate antecedent of inflammation is local damage, and that it may consequently be defined as the physiological effect of injury, it might appear as if we had already settled the question of its origin. Thus, for example, when we see the state of inflammation brought into existence as the immediate result of damage due to an obvious cause, we could not be accused of inaccuracy in attributing the pathological result produced to the injury inflicted; and most people would regard it as mere quibbling to suggest that some other agent to which the obvious cause was merely auxiliary or predisposing lay concealed behind it. Yet it is suggested and even dogmatically asserted by some pathologists, that in the genesis of every inflammation, however definite may be the relation between the antecedent damage and consequent reaction, this relation is, after all, merely secondary. The true cause is the introduction into the damaged tissue, from the atmosphere, of invisible germs.

This theory of the etiology of inflammation, when so presented, appears exaggerated and even absurd. There is, however, much more to be said in favour of it than at first sight appears; and it will be the purpose of this lecture to endeavour to come to a right conclusion as to the way in which, if not germs, minute organisms, co-operate, as they unquestionably do, with other more easily recognised conditions, in the production of inflammation.

I think I shall best present to you the points which require consideration by again beginning with inflammation of the cornea, as being more within reach of experimental investigation than any other. The particular case to which I will ask your attention—that of the superficial inflammation of the cornea which occurs after severance of the fifth nerve—is advantageous for our purpose: first, because the antecedent injury is remote from the seat of pathological change, and exercises no direct influence in producing it, so that free play is given for the operation of other concomitant circumstances; and, secondly, because the organ primarily affected is so transparent and so superficial that the slightest change in it can be appreciated by the naked eye, at the same time that its structure is so simple that the finer details of such change can be easily investigated by the microscope. Let me first state what these changes are, and in what order they occur.

As regards the eye, the immediate effects of the severance of its afferent nerves are, of course, the abolition of the protective reflex of winking, and the arrest of the secretion of tears, whereby the corneal surface is exposed to a variety of accidental injuries, at the same time that it is deprived of the mechanism by which, under natural conditions, foreign bodies are removed from the surface of the cornea and conjunctiva. The subsequent effects[1] are as follows. About twelve hours after the section of the nerve (in the rabbit) the cornea begins to lose its brightness. By the end of twenty-four hours the turbidity is distinct, and if at this period the animal is killed and the cornea excised, it is found that the epithelium has become partially detached. Up to this time there is no congestion of the limbus, no exudation of leucocytes from the dilated veins; in other words, no inflammation. These soon afterwards follow, but as yet the change is apparently a very slight one, and it is confined to the surface of the cornea. What is its nature? To find this out we have to appeal to the microscope. Sections of the corneal substance show that the corneal corpuscles have, in the opalescent parts, simply wasted away.

There is no "proliferation," nothing to be seen suggestive of disorder of nutrition in the sense of Goodsir and Bowman. What has happened is that the surface layers of corneal tissue have died, and in consequence that the epithelium is beginning to separate. If we look at the same eye thirty-six or forty hours later the state of things is very different. The cornea is surrounded by a ring of inflammation which has extended to the whole conjunctiva; the surface is uneven and opaque, and on microscopical investigation it is found that the whole tissue is pervaded by colourless corpuscles, some of which have escaped from the episcleral vessels, while others have entered from the conjunctival sac. How, at a still later stage, pus finds its way into the anterior chamber, and the destructive process eventually involves the whole eyeball, I need not occupy your time in describing. For to us the whole value and interest of the process I have described relates to its mode of origin, not to its issues.

Let me first state what evidence we have that the damage of the cornea which here, as in other cases, is the immediate antecedent of inflammation cannot be attributed to the cutting off from an organ so richly supplied with nerves as the cornea, of whatever trophic or other influence may be exercised on it by the cerebro-spinal centres. Without going so far as to deny the possibility of such influence, it is demonstrably inadequate to produce the result. For it has been conclusively proved that if, after section of the trigeminus on one side, the eye is carefully nursed—that is, protected from what may be called rough accidental injury, no change whatever ensues; and, further, that if both eyes are subjected simultaneously or successively to irritation of the same kind and degree[2] the paralysed eye is not one whit more affected than the sound one, so that there is no ground, so far as the cornea is concerned, for supposing that loss of innervation acts either as an exciting or predisposing cause of inflammation. This being admitted, it is evident that the real cause of damage is traumatic—that is, it is

[1] Senftleben: Ueber die Ursachen und das Wesen der nach der Durchschneidung des Trigeminus auftretenden Hornhaut Affection, Virchow's Archiv, vol. lxv., p. 69.

[2] Senftleben: Nachträgliche Bemerkungen, Virchow's Archiv, vol. lxxii., p. 278.

dependent on the fact that the unprotected and feelingless eye is brought by the animal repeatedly into collision with surrounding objects in such a way as to spoil the surface of the cornea. And we are justified in this conclusion by the observation that a spoiling of exactly the same kind can be produced experimentally by mechanical means, provided that these be of such a nature as to leave the epithelium intact.

But the question which now interests us lies behind this. What we have to ask is not how the surface is damaged, but how it happens that this damage leads to inflammation. A dozen years ago we should without hesitation have said that the disordered nutrition of the non-vascular cornea extends, by virtue of continuity of structure, to the vascular limbus, causing the vessels to exude liquor sanguinis, and the connective elements in their neighbourhood to proliferate. Such an explanation is no longer possible, for we know that the primary damage has nothing to do with proliferation, its condition is simply (to borrow Mr. Lister's expressive language) "approximated to the condition of ordinary matter." The question is, How does this purely negative change acquire the power of so affecting, or, as we may, without assuming too much, say, infecting the surrounding vascular tissues? The answer which modern pathology makes to this question is simply, micrococci; and this is, indeed, the only one that can be given, for neuro-paralytic keratitis is a type of what has been called a mycotic inflammation, one of which, the spread from tissue to tissue, is accompanied by the growth and multiplication of these organisms. Twenty, or even ten, years ago we should, for want of the means of observation, have failed to recognise them. Now, their existence can be determined, thanks to recently discovered methods of preparation, with as much certainty as pus corpuscles, and almost as easily. Admitting all this, we have still not got to the root of the matter. In the case of the cornea it is scarcely necessary to show that, however probable it may be that micrococci are the agents by which the primary lesion extends its influence to the surrounding vascular structures, their appearance on the scene is subsequent to the damage of which they are, in fact, among the pathological consequences. In other words, while their presence is the proximate cause of the secondary iritis and conjunctivitis, it does not follow that they are the originators of the whole process.

The question of the mode of origin of acute abscesses is a similar one. Dr. Ogston has, I think, pretty conclusively shown that micrococci invariably take part in this process, and act as if they were the sparks from which every such inflammatory focus is kindled. All this we may admit, and at the same time demur to the inference that has been drawn from it—namely, that acute inflammation in general depends on the morbific action of septic organisms. As regards this particular instance, we have sufficient reason for demurring in the consideration that an acute abscess is no more a primary inflammatory lesion than the conjunctivitis and iritis, with which we have compared it. An abscess does not come into existence in a healthy organ *d'emblée*.[3] It must always have been preceded by an inflammatory process. The proof, therefore, that micrococci were concerned in its origin, even if it could be carried so far as to show that around them the first pus corpuscles grouped themselves, leaves the question of the origin of the preceding inflammation still open.

In a paper published in the Medical Transactions for 1873,[4] I endeavoured to show, on the ground of experiment, that the only inflammations to which minute organisms stand in relation, are those which, from their proved dependence on previously existing inflammation, may be properly termed secondary or infective; and consequently that the organisms in question were, in all probability, not so much mischief makers as mischief spreaders—that is to say, that although an inflammation may come into existence without their aid, their presence communicates to it, after it has come into existence, the power of reproducing itself in previously healthy tissues whether by extension or dissemination. During the ten years which have elapsed since 1872, the question of the intervention of micrococci, which was then strange even to professed pathologists, has become familiar to every one; and now the tendency exists to believe that germs explain everything, so that whereas formerly one had to vindicate the very existence of such things as parts of pathological processes, it has now become one's business to protest with all needful vehemence against the attribution to them of functions which they do not possess. It will perhaps tend to clearness (which in relation to so complicated an inquiry is a matter of moment) as well as to the saving of time, if I submit to you at once the propositions which seem to represent the actual state of our knowledge on the subject. They are: (1) That the exudation of a normal inflammation is not infective. (2) That no organisms endowed with inflammation-producing (for which term the word phlogogenic may be conveniently substituted) functions exist in the atmosphere or in the ordinary aqueous fluids with which our bodies come into contact. (3) That whenever an inflammation becomes infective, it owes that property to chemical change in the exudation liquid, of which the presence of microzymes is a necessary condition. (4) That the introduction into the lymphatics, and eventually into the blood-stream, of microzymes which have been grown in septic exudations, is one of the mechanisms by which the seeds from which secondary or infective inflammations spring are disseminated. Thus we attribute to our organisms two distinct functions—that of developing what may be called the phlogogenic infection, and that of conveying it to all parts of the body. What we deny is, that there exists at present any evidence that the infection in question actually does originate in any other way than by the development of a septic process inside the organism. These several points I will endeavour to establish on the basis of experiment.

The proposition that a normal inflammation has no tendency to extend beyond the limits of the injury of which it is the physiological effect has already been illustrated; but it is further desirable to state what grounds exist for concluding that the introduction into the circulating blood of a relatively large quantity of exudation (which, so far as the organism as a whole is concerned, is the most important effect of a considerable local inflammation) does not produce secondary inflammations elsewhere. To arrive at this conviction, all that is necessary is to consider what actually happens. In the beginning of every acute inflammation of a vascular tissue, a large quantity of liquid leaks from the bloodvessels and is discharged into the intervascular spaces. This liquid does not at first accumulate where it is effused, but is at once drained off by the lymphatics, which, in consequence, become distended with lymph. In an admirable series of experiments by Dr. Lassar,[5] in which diffuse inflammation of the cellular tissue of the limbs was induced experimentally for the purpose of studying the mechanism of absorption, the amount of this drainage was estimated at different stages of the process. For this purpose a cannula was inserted in one of the principal lymphatic vessels leading from the inflamed part, and the lymph collected. It flowed at the rate of about one ounce per hour, in such quantity that in the twenty-four hours during which the exudation was at its height, the quantity which would have entered the blood could not be estimated at less than a pound—that is, something like half the weight of the animal's blood. Now, inasmuch as a local inflammation of this kind rapidly subsides, and leaves no trace behind it, and is not attended by any serious constitutional disturbance, it is tolerably clear that the mere admixture of a large proportion of inflammatory exudation with the blood is not in itself a matter of very serious moment, and that whatever impressions may exist in our minds as to the toxical properties of pus corpuscles must be discarded. So long as these structures retain their integrity there is no reason to suppose that the mere fact of their having escaped from the blood in consequence of injury of the vascular wall unfits them for re-entering the circulation.

In the early stage of the inflammatory process there is every reason to believe that the process of absorption goes on exactly as in health, with the exception that as many ounces have to be drained away in the one case as drachms in the other. Subsequently, as the percentage of solids, and particularly the number of corpuscles contained in the lymph increases, the drainage diminishes, partly owing to partial obstruction of the lymph paths by coagulation, partly because less liquid is exuded.

In dealing with the second proposition—namely, that neither air nor water contains phlogogenic particles, or, in other words, that the floating matter of the air is not phlogogenic, we have the same sort of evidence as with reference to the

[3] Micro-organisms on Surgical Diseases, British Medical Journal, March 12th, 1881.

[4] On the Infective Product of Acute Inflammation, Medical and Chirurgical Transactions, vol. lvi., p. 345.

[5] Ueber Œdem. u. Lymphstrom bei der Entzündung, Virchow's Archiv, vol. lxix., p. 516.

first—namely, that these supposed delinquents may be brought into contact with living tissues of all kinds without producing any local disturbance. But before attempting to show this I would ask you kindly to bear in mind that we have to do exclusively with the case of inflammation. I presume that no one here doubts that the air contains, or may contain, the seeds of specific diseases, and there are strong reasons for believing that these seeds are organisms. Whether they are or not does not at present concern us. My proposition is not that there are no such things as air-contagia, but simply that its particles are not phlogogenic, and the first point to be settled is, how we are to bring these particles into contact with living tissues so as to test their properties effectually. As regards the atmosphere, one method, which appears to me very conclusive, consists in passing large quantities of air through living tissues. In the rabbit the subcutaneous tissue may be kept distended for days by frequently renewed injections of unpurified air without producing any inflammation; nor is the effect any more serious if the same tissue is ventilated by a continuous current of the same air for a number of hours, even when that air is derived from a post-mortem theatre. Whence it seems clear that, so far as this tissue is concerned, air is tolerably harmless; for by this mode of ventilating a tissue, floating matter can scarcely fail to be deposited. The information yielded by similar experiments on unpurified watery liquids is in one respect more satisfactory—that we have here to deal with media, in every particle of which we can very readily prove the actual existence of germs in such a state of viability as to require only a suitable soil to ensure their development.

Dr. Wegner,[6] who is the author of the ventilation experiment to which I have just referred, has tested these liquids both on the cellular tissue and the serous surfaces, with similar results. I will ask your attention specially to those which relate to the peritoneum. When water charged with septic bacteria (that is, bacteria which had been grown for the purpose in a "cultivation liquid"—that is, a solution of nutritive salts) was injected into the peritoneal cavity of a rabbit, in quantity less than two ounces, it produced no effect whatever; and if the animal was killed the next day it was found that the whole of the liquid was absorbed, and that the peritoneum was in a normal state. In the rapid process of absorption where had the organisms gone to? Had they disappeared from the peritoneum, and were they reposing harmlessly on its surface? The examination of the lymphatic vessels of the diaphragm, which, as is well known, serve as the ordinary drainage channels for the peritoneum, showed that for the most part they had been absorbed; for these vessels were full of bacteria which had been arrested on their way from the peritoneum towards the venous system. But neither in the lymphatics nor in the peritoneum did they occasion any inflammatory change. Similarly he found that when a rabbit was so arranged that a large quantity of liquid (warm, ¾ per cent. solution of salt) was led, by means of suitably arranged drainage-tubes, through the peritoneal cavity in a continuous stream for many hours, so that the membrane was exposed for a long time to whatever phlogogenic influences the liquid conveyed, no effect whatever was produced. So long as the liquid was constantly changed there was no infection; no inflammation. If it was allowed to remain stagnant in the peritoneum in larger quantity than could be absorbed, these results followed inevitably; so that we come to this: that while liquid which is actually charged with septic organisms is harmless, if its quantity is such that it can be rapidly absorbed, common water, if it accumulates, will produce a fatal peritonitis.

It may be thus considered to be established that septic bacteria, or their germs, in a viable state are not necessarily phlogogenic. I may, therefore, pass at once to my third point—namely, that, although neither the exudation products of a normal inflammation alone, nor septic organisms alone are infective, the association of these two conditions is always so; in other words, that exudation fluids which are infective owe that property to the chemical changes which septic ferments determine in them, and, conversely, that septic organisms which are infective owe their infectiveness to the exudation soil in which they have grown; to illustrate which I will pursue the study of peritonitis a little further. In experiments which I made a dozen years ago, I showed that in rodent animals peritonitis induced by the injection of irritant liquids is always infective. The exudation products of such inflammations were found to be septic, notwithstanding that the irritant used (as, e.g., tincture of iodine) was not only free from germs, but destructive of them. This was understood to mean that the first effect of the iodine was the effusion of liquid into the peritoneal cavity; the second, the infection of this liquid by formed ferments, which found their way into it not from the atmosphere, or from external media of any kind, but from the alimentary canal. A knowledge of the exact conditions which lead to this result is obtained by simplifying the mode of experiment. We have already seen that water, whether contaminated with septic organisms or not, may be introduced into the peritoneum in limited quantity without effect. But if water which has just been boiled and cooled is injected with antiseptic precautions in larger quantity—that is, in quantity so large that it cannot be rapidly absorbed—the result is entirely different. The water which is thus injected accumulates in the serous cavity, charges itself by diffusion first with the salts, subsequently in increasing proportion with the proteids of the blood, and thus becomes a most favourable soil for the development of septic organisms, which, in their turn, act infectively or phlogogenically on the bloodvessels and living tissues with which they come in contact. A septic peritonitis ensues, which kills the animal by septichæmia in twenty-four or thirty-six hours. This simple experiment serves, I think, to illustrate the fundamental principle that although the seed is indispensable to the coming into existence of an infective process, the question whether that seed becomes morbific or not depends, not on the seed itself, but on the soil. But there are other examples equally striking. On a former occasion, seven years ago, I gave an incomplete account of certain experiments of my friend Professor Chauveau, which I had then recently witnessed, and still regard as among the most valuable ever made with reference to the questions which now interest us.

M. Chauveau's observations[7] were founded on an operation which, under the name of bistournage of the testis, has been for centuries practised in the South of France for economical purposes, and which, although extremely simple, is more scientific, and better adapted to its end—that of annulling the function of the testis with as little injury to the surrounding parts as possible—than any of the operations which are practised in this country. The procedure is as follows:—The organ, with its serous and fibro-muscular coverings, is freed from its attachment to the dartos, then twisted on the cord so that its lower end is uppermost, and finally rotated round the cord as an axis four or five times, the whole being accomplished without the aid of any instrument, and with wonderful rapidity. If the animal is killed and the arteries are injected, it is found that the spermatic artery is empty beyond the twist of the cord. Consequently the circulation of the testis is completely cut off. The result, stated shortly, is that adhesions are promptly established between the organ in its new position and the dartos, as well as between the two layers of the tunica vaginalis, and that in these adhesions new vessels are formed. These, however, never extend into the dead organ, which consequently undergoes degeneration and atrophy. For our purposes the value and interest of bistournage lie first in the evidence it affords—evidence based on ready made experiments, to be numbered by hundreds of millions—that, under favourable conditions, the inflammatory effects which result from fairly severe injuries of vascular tissue are strictly limited to the parts directly injured; and, secondly, as affording the opportunity of determining the nature of those conditions by observing the effect of varying them. Here, as in respect of every traumatic inflammation, two factors had to be considered. The strict limitation of the inflammatory effect to the parts directly injured might be due entirely to the absence of septic organisms, or entirely to the circumstance that the surrounding structures were so little injured that they suffered thereby no appreciable damage. Experiment showed that both factors were operative. If, instead of allowing the organ to become grafted in its new position, the process of union was interrupted by repeated manipulation, an inflammatory process was set up between the dartos and the external surface of the fibro-muscular tunic, which resulted in suppuration; whence it was manifest that without any change of the condition of the parts as regards the exclusion of germs (for

[6] Wegner: Chirurgische Bemerkungen über die Peritonealhöhle, Langenbeck's Archiv, vol. xx., p. 51.

[7] Nécrobiose et gangrène, Paris, 1873.

the integument remained perfectly healthy), the phlogogenic effect was increased in proportion to the injury inflicted. But this effect was not comparable to that which was produced when, without any modification of the operative procedure, means were taken to secure the existence in the circulating blood, and consequently in the bloodvessels of the organ, at the moment that its circulation was arrested, of infective material. This was accomplished by infusing into a vein a sufficient quantity of diluted pus, derived from an infective abscess, to impregnate the blood with septic products without risk of fatal septichæmia. In an animal so prepared the devitalised organ, instead of becoming engrafted, itself became the nucleus of an inflammatory tumour, which rapidly extended to surrounding parts, and resulted in the death of most of the animals experimented on, either by septichæmia or by diffuse suppuration.

Following on the lines of Professor Chauveau's investigations, Professor Kocher, of Bern,[8] has materially extended their bearing by showing that when septic products enter the circulation in what may be called the normal channel—that is, the channel by which they are constantly entering the circulation, in greater or less numbers—they exercise a similar power, not of producing inflammations in undamaged tissues, but of transforming the normal effects of injuries into infective processes. The structure chosen for these experiments was bone. Having first found that in a healthy animal the most active irritants or caustics can be, if antiseptic precautions are used, injected into the medullary cavities of bone, without extension of inflammatory changes beyond the limits of the injury, he repeated the experiment under special conditions as regards diet. Having produced a normal osteomyelitis in the way above described and observed the animal during the first week, at the end of which time its condition was perfectly normal, he substituted for its ordinary food a diet of putrid material charged with septic organisms. The result was in entire accordance with Chauveau's experiments—namely, that the impregnation of the blood with material absorbed from the intestine converted the normal into an infective osteomyelitis. The dog became ill and was subsequently killed. The medullary cavity of the injured bone was converted into an infective abscess. A result of this kind perhaps scarcely needs comment or explanation. We have already learnt that the presence of septic organisms (provided that they have not been bred inside the organism) is not necessarily attended with any danger. We have now learnt that they become sources of danger at once when they are brought into relation either with devitalised organs or with extravasated serous liquids of any kind, and particularly with inflammatory exudation.

The last of my four points relates to the purely mechanical part which micrococci seem to play in the dissemination of infective material. To illustrate this I must resort to the experiments before referred to relating to the absorption of liquid from the peritoneum of the rabbit. I mentioned how, after injection into the peritoneal cavity of liquid charged with bacteria, the lymphatics leading from the peritoneum are found to swarm with bacteria, and these organisms also abound in the blood. If the animal is killed, say ten days or a fortnight after the injection, yellowish or opaque deposits are found here and there in the internal organs, particularly in the lungs, liver, and kidneys, which have been conveyed by the blood-stream to the places in which they are found. If, instead of charging the circulation with harmless bacteria grown outside, you produce an acute peritonitis, the effect is the same mechanically, but pathologically very different. In both cases the peritoneum contains liquid charged with septic organisms, which in both cases are conveyed therefrom by the lymphatics into the blood-stream; but in one case they enter the circulation incapable of doing any harm excepting such as may result from the plugging of capillary arterioles, in the other they carry with them a phlogogenic virus by virtue of which wherever they lodge they become the starting points of infective abscesses. Now, as I observed before, it is not to be imagined that the particles by which infection is disseminated throughout the organism so as to produce multiple abscesses in muscles and viscera, consist exclusively or even chiefly of aggregations of micrococci. All that can be maintained is that whenever they exist in the circulation they certainly take part in the process of dissemination, and we are strengthened in this conclusion by what is now known of ulcerative endocarditis, in which the circulating blood becomes (sometimes very suddenly) impregnated with infective material by the instrumentality of fibrinous matter separated from the mitral valve. In these cases life is destroyed not by the mere mechanical plugging of the arteries, but either by septichæmia or by a slower process characterised by the development of miliary abscesses in the muscular tissue of the heart, in the liver, spleen, kidneys, and other internal organs.

It cannot be asserted that the little emboli which here act as if they were seeds of infection consist chiefly of masses of micrococci, but we know from direct observation of cases, that micrococci are found, as it were *flagrante delicto*, at the very spots where the mischief has been done, and surrounded by the evidences of its nature.

Still more remarkable is the history of the secondary lesions found in internal organs during the development of small-pox, which have been so thoroughly studied by Dr. Weigert.[9] He has shown that early in the suppurative stage of small-pox—that is, before the secondary fever commences—cylindrical masses are to be found on microscopical examination in various organs, particularly in the liver, spleen, lymphatic glands, and kidneys, which consist simply of capillaries plugged with micrococci. At a somewhat later period, though the organs are still to the naked eye perfectly healthy, each plug is surrounded (in the section) by a zone of altered tissue, the change consisting in wasting of the nuclei of the cells. Up to this time the process has given rise, to use the ordinary language, to no surrounding vascular reaction, but eventually the devitalized tissue becomes the seat of infiltration with leucocytes, and is thus converted into a circumscribed miliary abscess, with a surrounding border of hæmorrhagic congestion. So far as relates to the mechanism of the process, it is almost as plain as it was in the case in which we produced the same results experimentally in the rabbit by injecting bacteria into the peritoneum. In small-pox the micrococci, which take so prominent a part in the development of the cutaneous eruption, find their way (probably by the lymphatics) in myriads into the circulation. We have no evidence that they carry with them the specific contagium of the disease. All that is proved is that they lodge in the capillaries of the internal organs. What they do there may well depend on circumstances. It may probably be assumed that in all cases they do some damage to the tissues in their immediate neighbourhood, but we have no evidence that in every case each capillary embolus becomes the nucleus of an infective abscess. Whether this happen or not will probably depend on the quantity and progress of the cutaneous suppuration, and on the degree in which the circulation becomes impregnated with septic material.

[8] Kocher: Die acute Osteomyelitis mit besonderer Rücksicht auf ihrer Ursachen, Deutsche Zeitsch. f. Chirurgie, vol. xi., p. 118.

[9] Anatomische Beiträge zur Lehre von den Pocken, Breslau, 1875, Part ii.

Gulstonian Lectures

ON

PULMONARY CAVITIES; THEIR ORIGIN, GROWTH, AND REPAIR.

Delivered before the Royal College of Physicians, in March, 1882,

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LECTURE III.—PART I.

MR. PRESIDENT, FELLOWS, AND GENTLEMEN,—I turn with a feeling of relief, which you doubtless share, from the consideration of the destructive activities of phthisis, to the methods adopted by nature for the healing of the pulmonary lesions. The doctrine of the curability of pulmonary excavation is comparatively young. Although Hippocrates had noticed the beneficial effects of the rupture of pulmonary abscesses into the bronchi, and founded upon this discovery a method of treatment by succussion, the recognition of

cavities during life remained a matter of inference rather than of observation, and speculations as to the possibility of their healing were controlled by no scientific test until, with the progress of medicine, it became possible to follow the history of a cavity from its origin to its ultimate stages. To Laennec belongs the credit of having pointed out the reparative action frequently observed in phthisis. Of this he gives several instances.[1] By him two degrees are recognised in the healing of cavities: (1) the transformation of an ulcerating excavation into what he terms a fibro-cartilaginous fistula; (2) absolute closure by means of cicatrisation.[2]

With Laennec we are justified in considering the dwindling of cavities and the fibrous metamorphosis of their walls to be a step towards cure; and I have no hesitation in stating that a fair proportion of pulmonary cavities not resulting from acute phthisis undergo more or less of this reparative action. Of the complete cicatrisation of cavities I am unable to speak with the same confidence. Rilliet and Boudet's observations on the frequency of concretions and scars in the lungs (present, according to them, in four-fifths of the autopsies performed on subjects beyond seventy years of age), give us a high idea both of the prevalence of cavities and of their complete obsolescence. More recently Heitler,[3] from a study of the post-mortem registers of the Vienna "Pathologisch-Anatomische Anstalt," for a period of ten years, has collected 780 instances of healing or of obsolescence of tubercular lesions, among which he mentions several cases of more or less complete cicatrisation of cavities; and he admits the curability even of large caverns provided the latter be strictly confined to the upper lobe.

But the opposite side of the question is supported by weighty authorities. By Andral the alleged remnants of an ancient phthisis were viewed with some scepticism; they failed to convince Louis, who says that he never found at the apices those masses of membrane with dilated bronchial ramifications terminating in them which Laennec records as cicatrices of tuberculous cavities. Dr. Walshe alludes to the subject in very guarded terms as follows:—"If on a small scale cavities may probably cohere by their opposite walls, of the cicatrisation of a large excavation I have in vain looked for an example; and, without meaning to assert the sheer impossibility of the event, I must maintain it to rank among the mirabilia of morbid anatomy."[4] A limit is undoubtedly given to the cicatrisation of cavities by their size. It would be rash, however, to state that the smaller cavities alone are susceptible of healing. I am informed by physicians of experience that vomicæ of considerable dimensions which had come under their observation during life have been recognised after death to have perfectly healed.[5] Mine had not been the good fortune to witness hitherto this happy result, neither do I possess any specimens illustrating complete healing of large cavities. If for no other reasons, such specimens are probably rare owing to the long interval of life which may succeed the disease. Partial cicatrisation I have occasionally witnessed in cavities of good size, and an example of this kind will be placed before you.

On the other hand, the array of clinical evidence in favour of the healing of vomicæ is imposing. The number of cases in which cavities cease to give signs of their presence is very large. As an instance of this class let me briefly allude to the following case:—

Henry S——, aged twenty-two, a tall, thin man, of pale and rather muddy complexion, first applied for treatment at the end of January, 1881. He had suffered from a slight cough for three years; but this symptom had only during the last three months become distressing, and during the same comparatively short period his general health had failed noticeably, although not to an alarming extent, for he had followed his daily occupation as a tailor up to five days previous to his first visit. On examination, gurgling cavernous sounds and pectoriloquy were found to extend anteriorly over the upper two-thirds of the left chest; the right lung yielded normal breathing sounds. He made rapid progress under tonic treatment; and on March 8th the cavity was found to have materially diminished. When he was again examined, on May 24th, a remarkable change had taken place; the cavity was reduced to small proportions, whilst the resonant note of the right lung could be obtained for a considerable distance beyond the middle line of the sternum, and the heart was in a great measure uncovered. Measurements of the chest taken the same day gave 14¾ inches for the right side, and 14¼ inches for the left. He was subsequently admitted into the hospital under Dr. R. E. Thompson's care. On June 29th, no cavernous respiration could be detected; but the signs of fibrosis were well-developed at the upper and outer part of the lung, and large creaking sounds, and an almost gurgling "suction-sound" were audible in the upper half of the axillary region. He left the hospital much improved in strength, on July 17th, a striking instance of the rapid and practically complete disappearance of the signs of excavation. Unfortunately, two days later, he was seized with severe haemoptysis—an accident so liable to supervene in cases of excavation undergoing fibrosis—and he died on July 27th, after several recurrences of the bleeding. No post-mortem examination was performed.

Instances of a similar nature are far from uncommon in which life is prolonged for considerable periods. But an absence of the physical signs of a cavity does not of necessity imply completed cicatrisation. It is usual to find after death that the cavity is rather collapsed than obliterated, and that in a strict sense healing has not been accomplished. I freely confess that, after careful consideration, my conclusions do not materially differ from those of Dr. Walshe. Absolute cicatrisation occurs only in cavities of moderate size, but is less common than imperfect cicatrisation with implication of cheesy or calcareous residues. Large cavities, although not insusceptible of healing, although in rare instances they may completely heal, as a rule go through the reparative process too slowly to reach obliteration before life is brought to a close.

Too often the local efforts at repair observable in cavities are not evidence that a favourable course is taken by the disease itself: whilst cavities are approaching closure consumption may be fatally progressing. Conversely, the activity of phthisis may have become extinguished where some excavation still persists as an abiding danger; I would insist upon this last combination, which practically represents the full measure of the hopes we entertain in the majority of cases. What I have said not only provides an excuse, but points to a necessity, for an independent study of the local processes of healing.

Arrested phthisis is a correct expression as applied to the lung disease, but it inadequately describes the condition of cavities which have ceased to extend. The latter are not only arrested, but in retrocession. Cavities are never at a standstill, but must either grow or decrease. The degree and the mode of the reparative changes within them are mainly governed by the following factors:—(1) Their size and number; (2) their situation; (3) the facilities for contraction; (4) the facilities for compensatory hypertrophy.

Let me begin the discussion of these various influences with a brief allusion to the subject of *compensatory hypertrophy*. A vicarious development of the spongy tissue is not only seen in cases of recovery, but among the fatal cases, in all those where the disease runs a chronic course. Upon cavities the beneficial influence of this compensation is twofold: it not only acts indirectly by improving the general condition of the system, but it will be shown by its gentle and sustained pressure mechanically to assist the contraction of cavities. A question spontaneously arises as to the nature of the hypertrophy. According to Dr. Douglas Powell, the practical results will decide in each case whether the hypertrophy is of a true or of a false kind. In true hypertrophy recovery may be practically complete, the breathing is easy, the chest of fair size, and the fitness for exertion good. Conditions are different in the other instances; the chest may be large, but the patient is constantly breathless on the least exertion; in a word, the lung is in the condition so well described by you, Mr. President, as "hypertrophous emphysema," in which the bulk of the organ is not a measure of its power. I am not convinced that we have to deal in either of these cases with a genuine hypertrophy in the sense of new formation of parenchyma. The bronchial tree, with its appended air sacs, must be considered as originally perfect and not admitting of reconstruction; and we are assured, on the authority of Dr. Waters, that air cells are incapable of being regenerated. I believe that the differences between so-called true and false hypertrophy are susceptible of a simple explanation by the more or less of development

[1] See Cases xvii to xxiii., Traité de l'Auscultation médiate.
[2] See Cases xvii. to xix., loc. cit.
[3] Ueber die Spontan Heilung der Lungen Schwindsucht, Anzeiger der K. K. Gesellschaft der Aertzte in Wien, 3 Juin, 1880.
[4] Practical Treatise on Diseases of the Lung, fourth edition, p. 470.
[5] Instances of this nature are given in the late Dr. H. W. Fuller's "Treatise on the Diseases of the Chest," p. 405-410.

of the vascular system of the alveolus. As long as the alveolus is submitted to a tension for which neither its walls nor its capillaries are fitted, impaired respiratory function and impairment of circulation must follow. But supposing the energy of growth be sufficiently great to accommodate the air-cells to new conditions, the alveolus may be enlarged and yet not suffer from overstretching. This view equally explains the recovery of younger subjects, even after extensive loss of breathing surface, and the opposite result observed in the aged, where the formative powers are too feeble to adapt the dilated air-cells for their increased duties.

Thanks to this secondary expansion, the damaged organ, even after extreme excavation, may reconquer almost the whole of the thoracic space allotted to it, but in the majority of cases the work of compensation devolves upon the healthy lung. Of this unilateral hypertrophy, the specimen which I have placed on the table is a striking illustration. When opened after death, the chest in this case presented for inspection anteriorly, as far as the left axillary border, nothing beyond right lung and heart, the left lung being entirely hidden from view. Had the comparatively healthy right lung been tied down by adhesions, such a remarkable degree of vicarious development would have been obviously impossible. We are reminded by this specimen not only of the value of compensatory hypertrophy, but also of the importance which attaches to the presence or absence of pleural adhesions.

From practical surgery we learn that the healing of large tracts of tissue is only possible at the cost of considerable *contraction*. In the skin this is well exemplified after destructive diseases or lesions, and a similar contraction is the means of recovery in visceral affections (e.g., syphilis, scrofula, infarcts, &c.). Thus it may be stated generally that the facilities for healing are commensurate with the opportunities afforded for this essential preliminary. As applied to pulmonary excavations the term "contraction" is clearly a figurative expression. Strictly speaking cavities cannot originate, but can only suffer, contraction. They are entirely dependent for any alteration in their shape upon external agencies, and, above all, upon the condition of the tissue by which they are surrounded. The boundary zone may be in one of five conditions:—(1) in recent consolidation; (2) in chronic pneumonia with fibroid tendency; (3) in simple fibrosis due to collapse of tissue; (4) in simple fibrosis connected with thickening of the pleura; (5) in a normal spongy state. The first or pneumonic condition is absolutely unfitted for contraction. The acutely pneumonic lung is too much stiffened by inflammatory deposits or sodden from œdema to be the subject of any noticeable shrinking. But if chronic and sufficiently moderate, the pneumonic action in phthisis is usually combined, as I have elsewhere insisted, with more or less of fibrosis, which may ultimately arrest all further progress of the disease, whilst it lays slowly the foundation for further contraction.

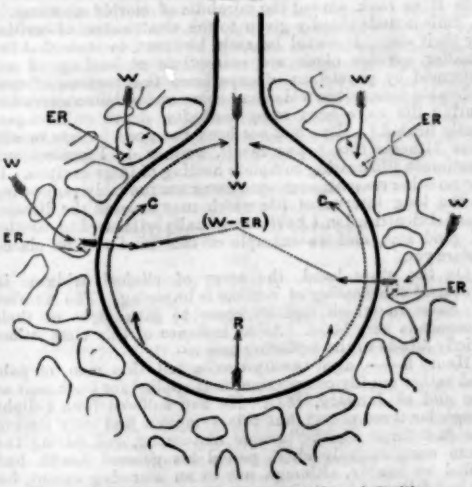
The fibrous ring to which the contraction of cavities is mainly referable is not necessarily an inflammatory product. It often becomes developed, as it were, passively from a layer of spongy tissue which has become compressed or collapsed. A zone of unexpanded lung substance is habitually observed at the periphery of pneumonic excavations, being the outcome partly of the pneumonia and partly of the softening. All pneumonia implies relative fulness of the inflamed air-cells and imperfect expansion of the neighbouring alveoli. In fibrinous pneumonia this fulness is rendered manifest by the rib-marks at the surface of the lung. Whilst admitting with Dr. Douglas Powell that this indentation is in a great measure due to the collapsed state of the thoracic wall, and to the fixation of the ribs in a position of expiration, it appears to me undeniable that the lung-tissue is, relatively to this expiratory condition, expanded. Similarly in catarrhal pneumonia, the relative distension of the affected districts is evidenced by the sharp outline and often slightly tumefied surface of the deposits, by the side of which the surrounding tissue is imperfectly expanded. The zone of lung-substance thus compressed generally survives, whilst the pneumonic consolidation softens into a cavity; and it supplies the basis of the fibrous cavity-wall. But the process of excavation itself is the chief cause of the alveolar collapse to which I have alluded.

Softening invariably leads to an interruption of the air-supply over a corresponding region, whether from ulceration of the bronchioles, from their inflammatory occlusion, or from tubercular deposit within them. The zone of compressed lung constitutes an important factor in the subsequent contraction, owing to the elastic elements which its tissue abundantly contains; but sooner or later fibrosis is set up in the condensed tissue, and a fibrous contraction is substituted for the elastic forces natural to the pulmonary structures. The formation of fibrous tissue around cavities is greatly assisted whenever the cavity is superficial by the existence of pleural adhesions. The supply of fibrous tissue from this source is not subject to any limitation; indeed, exuberance of fibrous growth may in its turn become a danger, inasmuch as it opposes the constriction of cavities under expiratory efforts, and the voiding of their contents by the agency of cough.

The best results due to the contractility of fibroid tissue are seen in the thin walls of cavities situated at a distance from the pleura, in the midst of healthy lung tissue. Here the contraction of the fibrous elements receives material assistance from the pressure of the adjoining spongy substance, provided the cavity membrane, although free from rigidity, be sufficiently strong to resist expansion under the weight of the atmosphere. These conditions are often combined in the cavities which result from the sudden discharge of the products of softening into the bronchus. Relieved from internal pressure, the elastic and fibrous constituents of the investing layer spontaneously contract.

The influence which atmospheric pressure may exert in aiding or in opposing this contraction deserves to be briefly discussed. If an ordinary cavity, which I will suppose to possess a patent bronchus, could be imagined to be connected on all sides with the parietes of the thorax by means of some unyielding substance, lateral traction would be exerted around it equal to the inspiratory expansion of the chest. Let the connexion be established by means of spongy tissue, by nature remarkably yielding; then not only will the outward traction mentioned above be removed from the cavity, but some degree of pressure will be exerted upon its outer wall by the expanding alveoli. These views are illustrated in the accompanying diagram. W represents

FIG. 5.



Forces favouring and opposing contraction of Cavities (Alveoli should have been depicted in a state of distension). W, Atmospheric pressure. R, Resistance (equal to W) offered by Cavity Wall. ER, Elastic resistance (not equal to W) offered by Alveolar Wall. (W–ER), Balance of pressure acting from without upon Cavity Wall. C, Spontaneous contractility of Fibrous tissue of Cavity Wall.

the atmospheric pressure acting upon the inner surface of the cavity, where it is supported by a resistance, R, equal to it. Similarly the weight of the atmosphere acts on the inner surface of the alveoli, where it is opposed by a smaller force, E R, which represents the elastic resistance of the spongy tissue. It appears from these considerations that any inherent tendency (C) to contract present in the fibrous wall would be assisted during inspiration by the quantity

(W–E R). I am aware that the compressing force which I have described is very fractional, and that its importance must be measured by its continuous action. The bronchial orifice, which I have supposed to be patent, is, however, very frequently occupied with secretion, more readily allowing the egress than the entrance of air. In such a case the deep inspiration which precedes muscular strain or the effort of coughing, is directly utilised against the outer surface of the cavity.

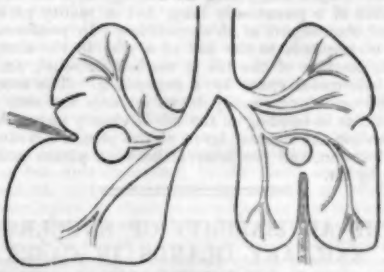
We shall see elsewhere that the atmospheric pressure may be transmitted to cavities by the thoracic walls, but its influence is nowhere more striking than when gaining access to the pleural cavity, it acts directly upon the external surface of the lung. The collapse of tissue and of cavities, induced by internal perforation of the lung, is so striking as to have suggested to some the employment, in excavating disease, of artificial pneumothorax as a possible means of treatment; but of this aspect of the question it is not my province to speak.

The influence of the compensatory dilatation of the neighbouring tissue, added to the natural contractility of the cavity wall, may suffice to induce gradual collapse of the smaller cavities leading to those solid scars, rather larger than a hemp-seed, which occasionally are found at the centre of the lung, abruptly terminating an air-tube of good size. The relations of the common cavity, situated near the surface, are not so favourable to contraction; the pleural adhesions, which are seldom absent, restrict vicarious expansion around it, whilst encroachment from the opposite lung rarely exercises any lateral pressure upon its walls. Contraction in these cases is rendered possible by two circumstances which are usually associated—(1) Falling-in of the thoracic parietes, and (2) shrinking of lung within the thorax. The alteration induced in the outline of the thorax may be general or local. From a consideration of the general architecture of the chest and of the interdependence of its component parts, it is at first sight easier to conceive a general than a local collapse of its surface. Uniform flattening of one side of the thorax may occur and is sometimes traceable to excavation; but the local depression limited to the seat of excavation is undoubtedly a more common change; the mechanism of its production is somewhat complicated. If we bear in mind the remarkable power of recoil exhibited by any part of the thorax after the application of temporary pressure, it is evident that the permanent falling-in to which I have alluded must have been of very gradual origin. The first impression is made prior to the establishment of excavation. Ribs overlying the inflamed districts become dissociated from the concerted movements of the intercostal muscles by a species of local paralysis, and ultimately they remain motionless. Dr. Ransome, from careful examinations by means of his stethometer (an instrument which deserves to be better known, and more extensively used) has proved that the minimum of respiratory excursion is afforded by those parts of the chest which conceal active pulmonary mischief. At this time the other ribs are actively at work, and become more and more independent of the paralysed ribs, whilst the costo-sternal joint of the latter, having acquired considerable looseness, permits the sternum to follow without hindrance the movements of the healthy ribs. The preliminary steps which I have described having paved the way for local retrocession, the thorax becomes gradually depressed with the progress of excavation. Exceptions to this rule are sometimes seen, in which no marked depression is occasioned even by large cavities. In rare instances, as in the specimen which I place before you, the whole lobe may be completely excavated, and so adherent to the chest wall, that for a long period the chest may present no striking collapse. In this special case the lower part of the lung was completely adherent and hyper-distended, and the absence of fibrosis argued a more moderate degree of pleural irritation than usually accompanies excavation so superficial and so extensive.

The collapse of the thorax has its final limits in the approximation of the ribs. When contact has occurred between the latter, any further retraction of cavities must entirely depend upon the fibrous shrinking of the lung itself. In fibroid phthisis this shrinking attains a remarkable degree. At the base, owing to the yielding nature of the diaphragm, a retraction of the lung and the contraction of the cavities are specially favoured; and the most usual result of the contraction of large cavities in this situation is a shortening of the thoracic space, in consequence of which the position of the liver, the stomach, the spleen, and other viscera, may suffer appreciable alterations.

Neither the shrinking to which I have alluded nor the secondary hypertrophy can occur without some disturbance of the normal relations of the visceral and the parietal surfaces of the pleura; and, conversely, rigid pleural adhesions are detrimental, not only as opposing contraction of the cavities, but as preventing the free expansion of the healthy tissue and its gradual insinuation between the pleura and the wall of the cavity. In the diagrams and specimens before you, the extent to which the spongy tissue may expand is strikingly shown by the length of the band connecting the retracting cavity with the pleura. In these cases adhesion was strictly limited to the point at which the cavity originally approached the surface. Extensive adhesions

FIG. 6.



Band-like adhesions of pleura strictly limited to surface corresponding to excavation.

around this point would have rendered such a result impossible. It follows that the existence of adhesions over the healthy parts of the lung forms a most important element in our diagnosis. Especially important is the question as to adhesion of the inferior surface. I need not insist upon the value of an unfettered respiratory mobility of the diaphragm. Adhesions cannot fail, more or less, to lessen the latter. But the anatomical alterations which they occasion in the lung are scarcely of less importance. It will presently be shown that adhesions to the diaphragm invariably restrict the area of the base, and consequently curtail the breathing surface of the lung.

In compensation for these great disadvantages, the only benefit accruing from pleural adhesions, in respect

FIG. 7.

Transverse direction of fibres of thickened pleura covering contracting cavity. Deposition of fat between ribs and pleura. C, Contracting cavity. P, Thickened and adherent pleura. F, Deposits of fat beneath ribs (R).

of the contraction of cavities, is the growth of fibrous tissue, to which I have incidentally referred. The remarkable thickness sometimes acquired by the pleural membrane enables the lung to shrink to a smaller size, by filling up superfluous space, or it may ultimately exert a directly constricting pressure. My own views as to the mode of origin of this thickening do not materially differ from those expressed by Dr. Douglas Powell in his work on Consumption (pp. 17–19). Pleural adhesions having formed, the respiratory movements of the chest and the shrinking of the excavated lung lead to a stretching of the young fibrous

tissue. Hence the transverse striation plainly seen after death in the adhesions. In harmony with this explanation, those parts are usually the seat of the greatest pleural thickening where falling-in of the chest meets with the greatest difficulty. In the ordinary apex-excavations the thickest pad of fibrous tissue occurs in the axillary region, coinciding with the greatest convexity of the ribs. Fibrous tissue is not the only substance employed by nature as a stop-gap. Very frequently fat is produced in appreciable quantities in the retro-pleural tissue. This I have often observed over the site of contracting cavities. (See Fig. 7.) The favourite situation is the internal surface of the ribs, as originally pointed out to me by Dr. R. E. Thompson. A contracted lung removed from the chest in connexion with the adherent pleura usually presents the appearance of deep parallel grooves, which alternate with prominent ridges, suggesting an analogy with the costal in dentations of a pneumonic lung, but in reality presenting the exact counterpart of this condition. In pneumonia the groove corresponds to the bed of a rib; in the contracted lung the position of the rib is marked in relief, and that of the intercostal space by a depression. The retraction of the fibrosed lung readily draws inwards the soft parts; but a similar in-bending of the rib is clearly impossible: in this situation the visceral layer of the pleura retreats from the periosteum, and the interval between pleura and bone is filled by fat.

ON THE ADVISABILITY OF ENUCLEATING THE AXILLARY GLANDS IN CASES OF REMOVAL OF SCIRRHOUS MAMMÆ.[1]

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MY object in this paper is to urge that in all cases where the mamma is amputated for cancerous disease the surgeon should remove also the axillary lymphatic glands. It is a cardinal rule in surgery, and very rightly so, that excisions of cancerous growths should only be undertaken when the surgeon can remove the whole of the diseased structures, and it is my desire to show that that rule applies to the case in point. Let me state at once that in all that follows I am limiting myself strictly to the one point named in the title of this paper, and that I assume that the cases of cancer of the breast removed are in other respects suitable for that operation, and that they satisfy the rule above quoted. For my purpose it will be convenient to divide the cases of cancer of the breast suitable for operation into: (1) Those complicated with evident enlargement of axillary lymphatic glands, and (2) those not so complicated.

1. *Is it right or is it wrong to operate for cancer of the breast where the lymphatic glands in the axilla are obviously enlarged from secondary cancerous growth?* The answer to this question depends upon the answers to two others: Can we safely remove cancerous glands from the axilla? and, Does the cancerous infection stop at the lymphatic glands for so long a period that there is time for those glands to become distinctly enlarged before the malignant disease has been carried to, and grown in, internal organs? The practicability of the operation must of necessity vary with individual cases. Where the glands are still freely movable it is easy to enucleate them; where they are firmly fixed down to the chest wall, it is impossible to remove the whole of the diseased structures without serious risk, or even the certainty, of fatal injury to the thoracic cavity. Between these two extremes there are several grades of severity. But if we look at the dangers and difficulties of the operation, we shall best arrive at the true answer. By drawing the arm well away from the side, and prolonging the mammary incision outwards, the axilla is easily exposed. The dangers are the primary ones of wound of the large bloodvessels and nerves, and wound of the pleural cavity. As the bloodvessels and nerves are very constant in their position the surgeon always knows where his danger lies, and even when the growths are adherent to these parts he can often, by slow and very careful dissection, separate them without wounding either vessels or nerves. The intercosto-humeral nerve, which crosses the axillary space, is most of all exposed to injury, and must be very generally cut or torn across. One common way of avoiding the danger of hæmorrhage is to separate the mass to be removed, except at the end next the vessels, and then to throw a strong ligature around this pedicle, and cut the mass away on the distal side of the ligature. This is only a "surgical makeshift." It is far better, by care and patience, especially patience, to separate the growth all round. If vessels of any size are found entering it, ligature them separately. The disadvantages of the makeshift plan are, that the vessels in the pedicle are not so securely tied; nerves as well as vessels may be included in it; and there is no certainty that the surgeon has removed all the diseased tissues.

The secondary dangers of the operation are suppuration in the axilla and thrombosis of axillary vein. In my own experience these accidents have not occurred, and I have found these wounds in the axilla heal very well, if I took three precautions: to put a drain up into the cavity, to apply suitable padding to keep the walls of the cavity in apposition, and to keep the arm fixed to the side.

I may briefly relate one case of removal of cancerous axillary glands under my own care.

On Aug. 30th, 1880, I operated at Westminster Hospital on C. C——, aged fifty-one, who had a scirrhous tumour in the right breast as large as an orange, and enlarged glands in the axilla the size of an apricot. After removing the mamma and a large portion of the skin over it in the usual manner, I carried the incision up and out into the axilla, and first of all carefully detached the cancerous glands from the side of the chest; it was then found that they were not only adherent to but growing completely round the axillary vein and some of the nerves of the brachial plexus. I cut down through the mass on to the coat of the vein, and was then able to peel the glands off the vein and nerves, leaving them uninjured. Unfortunately, before doing this I had put a ligature on the vein, as it at first seemed impossible to finish the operation without wounding it; this precaution, however, proved to have been unnecessary. The external mammary and one small superficial artery were the only vessels ligatured. The axillary wound healed at once, except a narrow track occasioned by the silk ligature round the vein. I saw this woman last year. She was then well. I need not quote other cases I have had; this was perhaps the worst of all. The only time I had any hæmorrhage was once when I wounded the subscapular vein close to its junction with the axillary; it was easily secured with a ligature, and caused no further trouble.

As to the second question, I think all will agree that there is often an interval of many months between the discovery of cancerous infection of the axillary glands and the appearance of signs of cancerous disease in the internal organs. But the *facts* I would adduce in support of this statement are these:—(1) That systemic secondary cancer without antecedent glandular infection is very rare, being met with in only about 13 per cent. of such cases. (2) That in cases of death from cancer of the breast, infection of the glands is met with far more frequently than infection of any other organ. Thus, in 128 autopsies, the glands were found cancerous in 115 cases, and the liver, which stands next in order of frequency, was infected only fifty-five times; the lung twenty-eight times; and then comes a great fall to units. What is the meaning of these facts but that the path of the cancerous poison from the breast is through the axillary lymphatic glands, and that the poison is delayed in its passage through these glands, often for a long period? Hence, on pathological grounds, this operation is justifiable. Practically, it is a safe procedure, not adding greatly to the risk of the simpler operation, and clinically it is successful; for, out of ninety-three cases tabulated by Oldekop and Winiwarter, in which this was done, the mean subsequent life was 39·3 months. And Gross states that in as many as one-third of the cases submitted to a complete operation—i.e., clearing out the axilla—no recurrence was observed up to so long as six years afterwards.

2. *Is it right, or is it wrong, when operating for cancer of the breast, in which no lymphatic enlargement can be detected, to remove the axillary lymphatic glands?* Practically this is a very simple procedure. A very small extension of the wound allows the finger to be passed into the axillary space, and with it the glands can be readily enucleated, without danger to nerves, vessels, or pleura. Or, better, a careful dissection of the axilla can be made. The small twigs of alar thoracic vessels, which are necessarily divided, are not

[1] Read before the Medical Society of London, March 27th.

large enough to require any treatment. A small drain should then be put in the axilla and the wound treated as already mentioned. Such a procedure hardly, if at all, adds to the danger of the original operation. But is it of any advantage? I believe it is, for I believe that in the very earliest stage of lymphatic infection it is impossible to detect any enlargement of the glands by the ordinary examination through the skin. Such a case occurred to me quite lately. A patient was brought to me by my friend, Dr. Shaw of Enfield, with a scirrhous cancer in the right mamma. Neither I nor Dr. Shaw nor Mr. Macnamara, who afterwards saw the case with me, could detect any lymphatic enlargement. But after excising the mamma I, as a matter of routine, proceeded to remove the axillary glands, and then I found that two of them were evidently already cancerous, in one the focus of disease being about the size of a shot, in the other of a pea. My friend, Dr. Heneage Gibbes, has prepared some microscopical sections of those glands, which prove the cancerous nature of the growths. Now here was convincing proof that had I simply contented myself with excising the mamma, I should almost directly have found a recurrence in the axilla, and this one case was sufficient to convince me that cancer may exist in axillary lymphatic glands which cannot be detected by the ordinary methods of examination. The only other explanation is, that had I used proper care and skill I should have detected these minute growths. To which I can only reply, that I examined the axilla repeatedly and with care, and that if I made an oversight, so did Dr. Shaw and Mr. Macnamara, and therefore it is an oversight that may be expected to be made. Further, recurrence in the axillary glands, apart from local recurrence, is not uncommon after removal of the mamma alone. And recurrence in the axilla is far more frequent after removal of the breast alone than when the glands are simultaneously removed. The axillary glands are not of functional importance at the age when cancer occurs.

In conclusion I would formulate my argument thus:—

1. Partial excision of a cancer should never be performed.

2. Where breast and axillary glands are cancerous the breast alone should never be excised.

3. That in very many cases of cancerous axillary glands excision can be performed with only slight additional danger, and with great benefit to the patient.

4. That the cases where such excision is not practicable are those in which the growth has spread to the chest walls. Pressure upon, or even adhesion to, the main bloodvessels and nerves of the axilla is not an insuperable bar to the operation, if sufficient care be taken.

5. That when no enlargement of axillary glands is to be made out, those glands may yet be infected with cancer, and that, therefore—

6. Even when not evidently diseased, they should be removed at the same time as the diseased mamma, or, in other words, "it is advisable to remove the axillary glands *in all cases of cancer* of the breast submitted to operation."

ON THE

CLAIM OF PROFESSOR BIZZOZERO TO THE DISCOVERY OF THE FIBRIN-FORMING CORPUSCLE OF THE BLOOD.

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IN a leader in THE LANCET of March 18th, reference is made to a communication by Professor Bizzozero, which appeared in the *Centralblatt* of March 11th, in reply to a letter of mine, published in THE LANCET of Jan. 28th. It seems to me that quite apart from all personal considerations, the question is one of such general and paramount interest in physiology and pathology, as to warrant me in returning to the subject, with a view to the more complete elucidation of its existing position. It is a well-known fact, of which I possess the fullest documentary evidence, that so early as February, 1878, I sought to secure to British physiology any credit which might accrue from the discovery of the fact that the existing chemical views of coagulation were destined to give place to morphological ones; in brief, that there existed in the blood a corpuscle the degenerative changes of which were competent to account for and explain all the phenomena of fibrin formation. I have traced these corpuscles, step by step, throughout the whole of their changes and variations, and have photographed each successive divarication till they present themselves in the well-recognised forms of fibrin—e.g., films, networks, embolic masses, &c. Now Professor Bizzozero claims for the corpuscles which he has seen the same properties which long ago I ascertained to belong to my corpuscles, nevertheless he denies to me the discovery of any *new body*, and contents himself by affirming that I have mistaken *decolourised discs* for a new element of the blood. Where is the logic of this? Will Professor Bizzozero maintain that having first deluded myself, I have next entered into all kinds of speculations relative to the fibrin-forming power of this body, and that these speculations turn out so accurate as to render it simply necessary to discover the actual body to which they are related, and by a simple exchange at once to complete an important research, the final issues of which had been already worked out; for there is no new fact in the original communication of Professor Bizzozero save that he has seen in the vessels of chloralised rodents a corpuscle with which he was not previously familiar? It seems to me that the only other alternatives open are either to admit that decolourised discs are the fibrin factors of the blood, or to affirm that he has also discovered in the blood another and an independent corpuscle which is capable of undergoing the same series of changes as mine. Is not the suspicion, which has already occurred to Professor Bizzozero, that he has come across one of the many transition phases of the corpuscles which I have described much more probable? I entirely concur with him when he says: "Above all, we must know if my blood-discs are identical with the corpuscles of Norris." Proceeding to contrast these corpuscles, he says: "The latter are, according to the description of Norris, of the same magnitude as the red discs, and lose their former invisibility only in the measure that they become charged with hæmoglobin; on the other hand, my blood-discs have generally a diameter two or three times smaller than that of the red corpuscles, and are never coloured by hæmoglobin; they are visible because they are granular, and because they possess a power of refraction differing from that of the plasma of the blood, whilst those of Norris refract the light in the same way as the plasma, and become therefore visible only when they are slightly coloured." He proceeds, "Truly, Norris might try to defend the supposed identity of both elements on the supposition that the discs might be a transition product of his invisible corpuscles, yet I might easily disprove this supposition by showing that the discs are visible with their typical characteristics in their most normal condition in the living circulating blood itself." The description here given by Professor Bizzozero of the bodies he has observed is much more explicit than in his original communication, in which he said that the reason they had hitherto escaped notice was due to their being colourless and translucent, but he now adds that they are visible because they are granular, and because they possess a power of refraction differing from that of the plasma of the blood. We have now to guide us in their identification five things: size, form, visibility, granular character, and absence of colour.

At this point it is desirable for me to state again my case, in a manner which does not seem to have presented itself to the mind of Professor Bizzozero. The question at issue is not whether the discs described by him are identical with my invisible corpuscles, but rather whether they belong to that series of discs which, on account of their tendency to degenerate into fibrin, I have designated the "fugitive group," some of the corpuscles of which are visible, others barely visible, and others still wholly invisible. At both ends of this group there are visible discs, for it includes on the one hand the advanced or nuclear lymph-discs, which are antecedent to the invisible discs, and on the other those discs which have again become visible by the acquisition of colour, but which are not yet sufficiently stable to be included in the permanent group of red discs. These limitations I have repeatedly stated in my papers. According to my view, therefore, all the younger discs of the blood, some of which are colourless and yet visible (like the white corpuscles but more delicate), others of which are colourless and invisible, and others partly coloured, and therefore visible, undergo conversion into fibrin when the blood is shed. Professor Hayem is well acquainted with the fact that bodies containing

colour contribute to the formation of fibrin, but he has not yet realised that these bodies are fragmentary parts and variously modified forms of the partially coloured blood-discs, hence he has described them as the independent bodies which he designates hæmatoblasts. I have taken great pains to prove that the so-called lymph-globule is in reality a disc-shaped body—a little smaller, but at the same time slightly thicker than the blood-disc, and that it consists of two varieties, to which I have given the names "primary" and "advanced," the former being a true cell of about the same diameter as the red blood-disc or slightly less, but having a greater thickness; the capsule of this cell is intimately applied to the nucleus, but can easily be demonstrated by osmosis. The advanced lymph-disc is the delicate, naked nucleus of this body; both these bodies exist in certain numbers in the blood, in a visible state, and the latter is the body which is resolved into fibrin in the lymph, as its derivative, the colourless disc, is in the blood. These lymph-discs are poured into the blood in large numbers at the subclavian and splenic veins, and for the most part, being colourless and already smooth, enter at once upon the stage of invisibility; but those among them which are not so perfectly elaborated remain for a time visible, and are at this stage colourless, finely granular discs, slightly smaller than the red discs. This appears to me to be the body to which Bizzorero refers, and as it forms fibrin while still in the lymph, so *à fortiori*, when present as one of the elements of the "fugitive group" in the blood, it is a fibrin-forming corpuscle; but the difference between the fibrin formed by this body and the invisible and intermediate discs is precisely the difference between the coagulation of the lymph and of the blood—the one yielding, soft and granular, the other more homogeneous, viscous, and tenacious fibrin. These bodies, for many years familiar to me, must have been seen by most observers of the blood, but regarded as delicate minute forms of the white blood-corpuscle. It would indeed be a matter of surprise if they could not be seen in the circulating blood when carefully looked for, and therefore the fact that "they are visible with their typical characteristics in their most normal condition, in the living circulating blood itself," is not the slightest disproof of the view that they are transition forms. They are, in fact, a slightly less developed stage of the invisible colourless disc which eventuates in the red disc, and their gradual transformation into this body may be traced both in the lymph and in the blood. I have already incidentally referred to the allegation of Professor Bizzozero, that the invisible corpuscles of the blood as displayed by my methods are decolourised red discs. Such a view naturally occurs as a possible contingency to the mind of everyone, and it was the first point to the clearing up of which I seriously applied myself. Professor Bizzozero will pardon me for saying that he is at present only on the threshold of this research, and occupies to-day the position in which I found myself in the latter part of the year 1877. He seems to be unacquainted with my paper, published in the Proceedings of the Birmingham Philosophical Society in June, 1880, in which I deal exhaustively with this aspect of the question, and bring together numerous overwhelming proofs that this facile explanation is altogether untenable.

The singular notion that blood-discs can discharge the whole of their hæmoglobin, and become suddenly (within ten seconds) colourless not only to the eye, but to infinitely more delicate tests, of a photo-chemical nature; and that in a serum, which must (if the corpuscles lose it) necessarily contain hæmoglobin, or, as is the case, in a serum which has been purposely saturated with hæmoglobin (derived from an independent source) at the moment it leaves the vessels, is one entirely of modern growth—in fact, has been invented to meet my discovery. If to draw a drop of blood from the end of the finger, and to place it on a slide, either at the temperature of the room, or at that of blood or ice, and to lay down upon it in the gentlest manner a flexible mica-cover, is a manipulation calculated to bleach to whiteness some corpuscles, while leaving others and contiguous ones, under precisely the same conditions, absolutely unmodified, then certainly there is an end to all such processes as corpuscle enumeration with its diluents, measuring tubes, cells, &c. That able investigator of the blood, Professor Gulliver, who I believe was the first to inquire into the question of the decolourisation of red discs, favoured me in 1879 with a letter referring to my first paper, in which he says, "It gives me pleasure to see that you support my original view as to the essential difference between lymph-corpuscles and the pale globules of the blood (in reality the very point now again raised from the blood side by Professor Bizzozero); your new corpuscle bears a great resemblance to the colourless basis of the red corpuscles. I described and figured the 'mem-branous bases,' and taught how to obtain them, upwards of a quarter of a century since, but this does not affect your discovery of the free and hardly seen corpuscles in the living blood; indeed if confirmed, your observation will have important significance." Clearly Professor Gulliver does not entertain the idea that corpuscles can be reduced to the stroma-form by the mere arrangements necessary to place blood under the microscope for examination. I might retort upon Professor Bizzozero that to examine blood-corpuscles in a solution of chloral or chloroform (for this is what happens with chloralised animals) is not nearly so normal a condition as to examine them within a few seconds of being shed, from the end of one's own finger, in their normal undrugged plasma. Such objections raised to the simplest methods while conclusions are accepted without hesitation, when it is known that the blood contains foreign substances, capable of maintaining an animal in a profoundly narcotised condition for hours, seem to me, to say the least, "straining at a gnat and swallowing a camel." Further, I have ascertained that it is not the three-quarter per cent. saline solution alone which prevents decolourisation of the corpuscles, but the colloid matter which the blood contains, and I find that by increasing this element, by adding a little dry soluble albumen to the blood, I can prevent exosmose of colouring matter from the corpuscles to such an extent that no change in them, or in the liquor sanguinis, is obvious after a period of eighteen hours. The invisible corpuscles are present as usual. Where, I ask, is the colour from these corpuscles gone to on the hypothesis that they are decolourised discs? It is not present in the liquor sanguinis, for this photographs as clear and colourless as the adjacent air-bubbles. Numerous other reasons are given in my paper, each one of which, even when taken by itself, is decisive on this question. But to return to the main issue, what is to be done with the cardinal and indisputable fact that these identical corpuscles can be traced step by step into the well-known fibrin forms? In conclusion, I would respectfully ask Professor Bizzozero, and physiologists generally, to suspend judgment for a short period till my work on the "Physiology and Pathology of the Blood," now on the verge of publication, is issued, as it contains the evidence which I have accumulated upon these questions during the last few years.

Birmingham.

CASE OF TRAUMATIC TETANUS; RECOVERY.

BY JAMES MILLAR, M.B., C.M. ABERDEEN.

D. K——, aged forty-three, farm servant, a strong, healthy man, about 9 A.M. on Saturday, October 22nd, while engaged at a threshing mill, was dragged down on his side and shoulder between the wheels, which continued to revolve, and in this position he remained from three to five minutes. Being about six miles from town, an hour elapsed from the time of the accident till the patient was seen, when he was suffering slightly from shock, but had partially recovered. When his clothes were removed it was found that he had contused and lacerated wounds of the left side and shoulder; extending from the angle of the eighth rib to the inferior angle of the scapula were five transverse wounds about two inches in length (an inch on each side of the angle of the rib) and of considerable depth. The amount of skin between them at their widest part was not more than a quarter of an inch, and this was more or less torn. On the dorsum of the scapula, reaching to the spine of the scapula above, and extending to the posterior axillary border externally, was a large circular wound of irregular outline, about four inches in diameter. This wound was deepest close under the spine of the scapula, where only a few fibres of the infra-spinatus muscle covered the bone. The wound at its most superficial part reached the same muscle. This wound was filled with chopped flesh, mixed with part of the clothing. Above the spine of the scapula was another wound about two inches and a half in diameter; this one was not so deep as the former,

but resembled it in appearance, and over the clavicle was an abrasion of the skin about an inch in diameter. At the middle of the arm on the inner aspect there was a considerable contusion and a slight abrasion of the skin, embracing about half the circumference of the arm. This was the only place where the patient complained of pain, where he said it was considerable. No bones were broken. There was no bleeding except from the abraded surface over the clavicle, where there was a little oozing. The wounds were cleared of all débris as far as possible, washed out and dressed with carbolic lotion (1 to 40). The patient was laid on his right side, the left arm bandaged to the side, and the left forearm raised on a pillow in front of the patient at right angles to the body.

On the morning of the 23rd the wounds were again examined and dressed; parts of the disorganised tissue which had not been cut away the previous day were beginning to slough. A piece of oiled silk was placed over the carbolic dressing, and the whole secured by a broad bandage. The patient expressed himself as being quite comfortable, with the exception of the contusion on the arm, which was still very painful at times, but there was little discolouration of the skin round about. Temperature 99°; pulse quite normal. Appetite good, and the patient had slept for short periods during the previous night. The wounds were dressed twice a day, and such orders given for proper hygienic arrangements as could be carried out in a farm-servant's house. On the 24th the patient felt quite well; he had a good night. Face slightly flushed. Pulse 80; temperature 100°, and slight swelling of the forearm. The bowels had not been moved since before the accident; a dose of castor oil was ordered. The bridges of skin over the angles of the ribs were now beginning to slough, and at the bottom of the wounds in the same place large sloughs could be seen. On the 25th the patient was still doing well; he had slept well the previous night, and the bowels had been freely moved. Temperature 99°; pulse 80; appetite good. As the discharge was becoming profuse, the wounds were dressed three times a day, and marine lint placed round the edges of the dressings. Some of the sloughs were beginning to separate; patient still complaining of the contusion on the arm. On the 26th the pulse and temperature were normal; sloughs separating rapidly. The bowels not having been moved since the 24th another dose of castor oil was ordered. On the 27th he was still doing well; all the sloughs had separated, the wounds looking healthy, and some of them filling up rapidly. On the 29th the wounds were filling up with healthy granulations, and on the 31st were still clean and healthy.

On Nov. 2nd the wounds were beginning to contract, but the lower ones, over the angles of the ribs, had assumed a somewhat fungoid character. The patient was complaining slightly of a sore-throat, but only in the act of swallowing. On the 5th the neck was red, and painful when touched; nothing abnormal could be seen about the wounds. On the 8th he was not very well; a poultice had been applied to the throat, but without any beneficial effect. Temperature normal. Appetite good, but slight difficulty in chewing. Pain in the throat on swallowing. Patient said this pain proceeded from the shoulder to the throat; he felt it running up to the throat. He was also complaining of what he called "grips" in the shoulder. There being an epidemic of erysipelas in the district at the time, the wounds were carefully examined, but nothing abnormal could be seen. This was about 4 P.M. At 1 A.M. the following morning he was in great agony; a teaspoon could not be inserted between the teeth, but he could swallow any fluid put into the mouth. He was bathed in perspiration, with severe tetanic contractions of the muscles of the chest, neck, and back. The body generally was much arched back. He could not open the mouth in the least, though a small space remained between the teeth in the upper and lower jaws. Risus sardonicus very well marked, and expression of great agony and exhaustion. Pulse slow and full; temperature normal. The least noise or disturbance increased the severity of the contractions. The patient had one-sixth of a grain of morphia injected deep into the gluteal muscles, and in a very few minutes the severity of the convulsions was considerably lessened, and he expressed himself as being greatly relieved; still the contractions returned as often, but he did not feel them so much. In a few minutes after one drachm of syrup of chloral (B.P.) was administered by the mouth, the patient was still further relieved, the contractions being still as frequent, but much less severe, and, as he said himself, he could bear them. Instructions were given that he was to have a drachm of syrup of chloral every hour while awake. After taking three drachms of syrup of chloral he slept for about two hours; when he awoke the chloral was again administered, and he again slept for about an hour. On the afternoon of the 9th he was considerably under the influence of chloral. The paroxysms were not so regular in their occurrence and less severe. The contractions continued when he was asleep, but seldom awoke him, but he always had a severe one on waking. Temperature 99°; tongue white and furred, red at edges; the mouth could be opened a little wider. Up to the evening of the 9th he had taken one drachm of syrup of chloral every hour, except during the three hours he had been asleep, and the paroxysms were now milder, and he could bear them for some little time. He could not bear the body to be touched, and the head was still pulled back during the contractions, but not when asleep. Urine less in quantity, and dark coloured; patient not perspiring so much. On being asked to put out his tongue, the tip could not be protruded, but the dorsum, arched, was shown between the teeth, pressed hard on the teeth of the upper jaw with a jerking motion, and generally with a moist crackling sound. The patient was now ordered to take a drachm of syrup of chloral occasionally. On the 10th he was a little worse than on the previous day, and the chloral (same quantity) was given every hour. The appetite still remained good, but solid food could not be taken; the bowels were easily moved by half an ounce of castor oil every third day. In order to remove every possible source of irritation, the carbolic dressing was discontinued; the wounds, now level, and a little fungoid at the lower part, were bathed with lukewarm water, and water dressings applied. Whenever the dressings were being removed, severe paroxysms set in; but the wounds themselves, however, could be touched, bathed, and dried with impunity, and without the slightest feeling of pain. On the 11th he was a good deal better; the contractions had extended to the abdomen and thighs, but were much less severe; he had slept fairly well the previous night, and when the contractions awoke him he had another dose of chloral. His food consisted chiefly of beef-tea, hare-soup, and chicken-soup. The mouth could be opened a little wider, but the tongue could not be put outside the teeth. Another symptom observed was that the contractions were less severe if the bandage retaining the dressings was put on loosely. He now began to take his chloral only when the contractions became severe; they now recurred regularly, but with less intensity, every twenty minutes or half hour. The expression was much improved, but the risus sardonicus was still well marked. The patient went on improving till the 16th, when he was able to sit up in bed, with the body well bent forward. When he assumed this position, the contractions recurred less frequently. He found the contractions were a great deal worse after dinner. He could now take a little solid food, and open the mouth pretty wide; but he would on no account be without his chloral, from which he experienced immediate relief whenever he took it. The dose of chloral syrup was now increased to a drachm and a half, to be taken when necessary. On the 21st, the wounds were dressed with sulphate of zinc lotion (two grains to the ounce) and in a few days assumed a healthy character. The patient was now allowed to get up for a short time every day to sit in a chair; and in two or three days he was able to walk a little with assistance. The chloral was now entirely discontinued, and the patient went on favourably till Dec. 11th, when he was perfectly well, not the least symptom of tetanic contraction remained, and the wounds had nearly healed.

Remarks.—As to the cause of tetanus in this case, no explanation can be offered, except that for two or three days before the onset there was dampness of the walls of the room in which he was lying. The onset and course of the symptoms were closely observed, and differ somewhat from those described in text-books—in fact, few text-books agree in the precise description of the symptoms. There is nothing peculiar to record about the present case, but that it had been treated successfully by chloral in a country practice; and it was considered worth recording in the pages of THE LANCET, as the simple treatment adopted can be followed by any country practitioner who has not at his disposal, nor the opportunity of watching the action of, such remedies as curara, cannabis indica, &c., which have been used of late.

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ON

SOME RARE MANIFESTATIONS OF SYPHILIS IN THE LARYNX AND TRACHEA.

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(Continued from p. 522.)

MUCH more difficult, however, is it to say positively anything about—

(*b*) *The exact nature of the Syphilitic Tumours.* — The possibility of their being mere polypoid excrescences, such as are often formed during the course of syphilis, being *à priori* excluded by the absence of ulceration in their neighbourhood, and by their very form, the question only arises, were they condylomata or gummata? Now, the question of the occurrence of both these forms is at the present time in a state of very great confusion. Professor Lewin, of Berlin, who intended to read a paper on Syphilis of the Larynx[1] at the Throat Subsection of the late International Medical Congress, but who was unfortunately prevented from attending, states in his abstract that "the broad condylomata described by authors do *not* exist in the larynx. Only in the most exceptional cases very flat hyperplastic change takes place. Circumscribed gummata are not yet verified with certainty." These statements certainly leave nothing to be desired so far as precision is concerned. With regard to the occurrence of condylomata, Professor Lewin has, in a recent paper[2] on the same subject, made out his case more in detail, and undeniably very strongly. He admits an *exceedingly rare* occurrence of broad condylomata on the epiglottis and on the borders of the middle part of the vocal cords, but points out that, from anatomical and clinical reasons, the formations first described as broad condylomata by Gerhardt and Roth,[3] and after them by Vogler, Türck, Czermak, Seidel, Desprès, Mackenzie, Whistler, and Moure, cannot be looked upon as condylomata at all. I cannot enter here in detail upon all his arguments, which must be read in the original by those who are interested in this particular question, but must confess that the startling differences in the statistical statements of the greatest authorities on the subject seem to me to prove, at any rate, that the question of the occurrence of these tumours is far from being settled. Thus Mackenzie[4] states that he met with 44 cases of condylomata among 118 patients suffering from the early symptoms of laryngeal syphilis; Whistler[5] saw 24 cases among 88 patients in the same stage; Gerhardt and Roth,[6] 8 among 43. On the other hand, men of equally great experience, such as Lewin himself, Waldenburg, Isambert, and others, are disinclined, or even positively unwilling, to believe that condylomata are ever found in the larynx. Lewin, who wished to verify his own former statements concerning their occurrence, recently examined, in conjunction with the well-known laryngologist, Dr. B. Fränkel, 200 syphilitic patients, inmates of the Charité Hospital of Berlin. Instead of detecting between 30 and 40 cases of broad condylomata, such as described by Gerhardt and Roth and their followers, which they ought to have found, judging from the proportions as stated by these authors, they found not a single such case, and only some very few of those condylomatous forms on the epiglottis and vocal cords, the rare occurrence of which is admitted by Lewin himself.

My own experiences with regard to this question are entirely negative. I can only state that in the large number of cases of early syphilitic laryngeal affections which I have seen, I have never been able, though paying special attention to the question under consideration, to detect any projection or new formation, to which, judging from the appearance of analogous tumours which I have seen on other mucous membranes and on the skin, I should have been inclined to give the name of "condyloma." The question is evidently not ripe for decision, and deserves in view of such cases as the one under consideration, and of its importance for the question of the treatment to be adopted in such cases, the most serious attention of all those who have the opportunity of seeing many cases of laryngeal syphilis. The explanation advanced by Mackenzie,[7] who found in another series of cases, seen at the Lock Hospital, condylomata only twice amongst fifty-two patients—viz., "that the wide discrepancies may perhaps be accounted for in a measure by the different periods of the year at which the observations were undertaken, some having been made in the summer and some in the winter, but that they were in part to be explained by the fleeting character of laryngeal condylomata and by the different appearance which condylomata present in the larynx as compared with the pharynx, a difference which renders them likely to be overlooked,"—seems to me not quite to suffice to account for such differences of opinion between the most experienced observers. Looking at the different descriptions given by many of them of what they still call "condylomata," it would seem to be necessary first to come to a general understanding of the term with regard to (*a*) form, colour, and situation of these formations; (*b*) their life history—i. e., appearance, time of existence and disappearance; (*c*) concomitant symptoms (skin affections) and sequelæ; (*d*) relation of their appearance and existence to the stage of the constitutional disorder; (*e*) proportion of their occurrence in relation to laryngeal syphilis in general. Such an investigation, it appears to me, is the only way of coming to a satisfactory solution of the important question whether condylomata occur at all in the larynx, and whether, if so, they are analogous in all respects to condylomata found elsewhere.

Now, supposing that the result of such an investigation was in both respects in the affirmative, should we be justified in considering the tumours in this case as condylomatous? It will be seen that the evidence is of a somewhat conflicting character. Leaving aside the question as to the colour of the new growths, and without wishing to attribute too much importance to the surface of the tumours seeming to be perfectly smooth, which would certainly speak against their condylomatous nature, I must say that their distinctly semi-globular form certainly did not correspond with condylomatous growths seen in other parts of the body, where they develop freely without being pressed upon by the surfaces opposite, but against this it may be said that I only saw them *en profile*. As to their situation, it seems not to be impossible that such growths should originate in the posterior wall of the larynx close to the inter-arytenoid fold, if we take into account the fact that condylomata are homoplastic formations. Their tissue represents a hyperplasia of the matrix of the papillæ of the mucous membrane, and Luschka[8] has described papillæ in comparatively large numbers, and well-developed in the posterior part of the laryngeal cavity next to the inter-arytenoid fold. As to their life history, in this case I am, of course, only able to state that I saw them at what was very likely the height of their development, and that they gradually disappeared under the joint action of the iodide and the mercury. To draw any conclusion from the action of these remedies, as to whether these growths belonged to the secondary or tertiary period of syphilis, would be, of course, perfectly inadmissible. As regards the concomitant symptoms, there is another point much in favour of regarding them as belonging to the secondary period—namely, the co-existing erythema. Had they been products of a later period one might have expected some rupial or nodular form of syphilide. The same is to be said of the time of their occurrence in relation to the time since the development of the constitutional symptoms: the primary sore appeared but one year before these growths in the larynx were discovered. A final point much in favour of their belonging to the secondary stage would have been, if I could have positively verified my belief that there were similar tumours, only smaller, underneath the corresponding parts of the *right* vocal cord. It has been well pointed out by Jonathan Hutchinson[9] that *symmetry* of the manifestations is one of the characteristics of the *secondary* period of constitutional syphilis, and thus the verification of my casual observation, which, as has been stated, was not positively arrived at, would have been of considerable importance with regard to the differential diagnosis, and much in favour of their condylomatous nature.—Coming, however, now to the sequelæ, the chance of their being con-

[1] Abstracts of the International Medical Congress, London, 1881, p. 206.
[2] Kritische Beiträge zur Therapie und Pathologie der Larynxsyphilis, Charité-Annalen, reprint, p. 11 et seq. (Berlin, 1880).
[3] Virchow's Archiv, Bd. xx., S. 492; Bd. xxi., S. 1.
[4] Loc. cit., p 355.
[5] Lectures on Syphilis of the Larynx, p. 28. [6] Loc. cit.
[7] Loc. cit. [8] Der Kehlkopf des Menschen, Tübingen, 1871, p. 1871.
[9] Constitutional Syphilis, in Russell Reynolds' System of Medicine, vol. i., p. 292.

dylomata is much diminished. No doubt the œdema of the vocal cords was due to their presence, as shown by the whole course of the disease. Condylomata, however, though placed on a somewhat inflamed base, do not, so far as my experience goes, produce so considerable an inflammation in their neighbourhood as to lead to acute œdema (see also further on); and this, I should say, the less, in so firm and resisting a tissue as the vocal cords. To produce such severe consequences, formations belonging to the tertiary period of syphilis—i.e., gummata, would be more apt.

Now, were the tumours seen in this case gummata? It is clear *à priori* that most of the reasons enumerated in the foregoing paragraph, and pointing to their belonging to the secondary stage of syphilis, are as many arguments against the probability of this proposition. Thus, the question of situation being no help, because gummata occur everywhere, and the action of the drugs employed, for the reasons stated above, being equally unavailable for coming to a decision, the nature of the concomitant skin affection, as well as the time of the occurrence of the tumours in relation to the time since the development of the constitutional symptoms, speak, no doubt, strongly against the admissibility of the suggestion—viz., that they perhaps belonged to the tertiary period of syphilis. It must, however, be remembered that both these objections are not of an absolutely disproving character. With regard to the first—viz., that the skin eruption clearly belonged to the secondary stage, it must not be forgotten that though, *as a rule*, the succession in time of the different stages, and correspondingly of the symptoms and anatomical changes of constitutional syphilis, is a well accentuated one, yet occasionally, and perhaps not even very seldom, do exceptions occur to this rule—i.e., phenomena belonging to different stages intermingle with each other. This has been stated, as long ago as 1843, by Cazenave,[10] and later on by Virchow,[11] Bäumler,[12] and many other authors. It would therefore be not at all impossible that owing to a special virulence of the syphilitic poison in the case under consideration, a gumma or gummata should have developed in an internal organ, whilst a remnant of the secondary stage, in the form of the erythema, was still present. The same cause—viz., the intensity of the virus, would also well explain why at so early a period of the constitutional disorder tertiary symptoms should have made their appearance. Though certainly unusual, yet the development of gummata within the first year from the primary infection is nothing unheard of. Mauriac,[13] e.g., has described a case in which, as early as two and a half months after the primary infection an evolution of gummata took place; and Zeissl[14] states that he saw a nodular syphilide four months after the primary infection.

Again, supposing that tumours, similar to those seen underneath the posterior parts of the left vocal cord, did actually exist below the corresponding parts of the right vocal cord, this would not exclude the possibility of their being gummatous. I myself cannot speak from experience, having never, until this case occurred to me, seen what I should call "syphilitic tumours" in the larynx; but, different as the descriptions of different authors are of what they describe as gummata, there seems to be a tolerable agreement of opinion that the *smaller* forms, which are plainly of the nature of the "nodular syphilide,"[15] occur in a larger or smaller number of "round nodules of the size of a shot up to that of a pea, sharply defined from and somewhat elevated above their neighbourhood, and generally situated so close to each other that they sometimes nearly seem to coalesce. The covering mucous membrane, which is in the beginning normally coloured, gradually acquires a more yellowish tint."[16] Mackenzie, who gives a very similar description,[17] adds: "They are most frequently found on the *anterior surface of the posterior wall of the larynx*, and generally in groups." Taking these two descriptions together, and comparing them with my own description of the appearance of the tumours seen in this case, it will be admitted that my case seems to be almost a typical illustration of these general statements. The (doubtful) existence of the projections underneath the *right* vocal cord could be easily explained by the nodular syphilide having formed on the posterior and lateral walls of the subglottic mucous membrane, as it does generally on the skin[18]—a segment of a circle, the middle part of which—i.e., that situated on the posterior wall of the larynx, was below the line of laryngoscopic vision, whilst the nodules on the left third were more developed than those on the right.

(To be continued.)

[10] Traité des Syphilides, page 471 (Paris, 1843); see also pp. 317 and 207.

[11] Archiv f. Path. Anat., Bd. xv., 1858, S. 217.

[12] Syphilis: in v. Ziemssen's Cyclopædia, German edition, vol. iii., 1876, p. 31; see also p. 27 and following.

[13] Quoted by Bäumler, l.c., pp. 28 and 168. The reference, by the way, is not quite correct. An abstract of Mauriac's paper was given in Schmidt's Jahrbücher of 1875, and not, as erroneously stated, of 1874.

[14] Loc. cit., p. 171.

[15] Lewin strictly differentiates between (a) nodular syphilide, (b) diffuse gummatous infiltration, and (c) the circumscribed gumma (l.c., p. 26). It is only the last-named form of which he says (see above) that its occurrence in the larynx is not yet verified with certainty. In consideration of the unsatisfactory state of the question, I have preferred not to introduce subdivisions, but to avail myself of the generally known and significant term of "gumma."

[16] Lewin, loc. cit., p. 26. [17] Loc. cit., p. 359.

[18] Zeissl, loc. cit., p. 170.

A CASE OF

FOREIGN BODY IN THE ŒSOPHAGUS, FOLLOWED BY SURGICAL EMPHYSEMA.

By W. LEWIS MORGAN, M.A. Oxon.,
SURGEON TO THE RADCLIFFE INFIRMARY; LECTURER ON NATURAL SCIENCE, EXETER COLLEGE.

MRS. C——, a married woman, aged fifty-four, was admitted into the Radcliffe Infirmary, Oxford, on Nov. 5th. She gave the following history: Whilst eating her dinner at midday, having just put a piece of pork into her mouth, her attention was suddenly called to one of her children; she was just about to say something to the child when "the piece of pork slipped back into her throat." This accident was followed by severe paroxysms of coughing and great difficulty in breathing; all the afternoon she was retching and coughing, and felt, as she describes it, as if something had stuck somewhere half down the neck. At three o'clock she noticed her face was beginning to swell, and being much alarmed a doctor was sent for. He attempted to pass an instrument, but, according to the patient's statement, was not successful. She was then brought to Oxford, a distance of eighteen miles, and admitted into the hospital at about 9 P.M. During the journey her distress was very great; she was continually coughing and retching.

The medical officer, Mr. Hine, gives the following account of her condition on admission: The patient seemed to be suffering acute pain; with great difficulty she swallowed a small quantity of fluid. The face, neck, and upper part of the thorax were much swollen and emphysematous. The loose cellular tissue beneath the lower eyelids was greatly puffed out. An attempt was made to introduce an œsophageal bougie, but it could not be passed for more than about six inches, when it was stopped by some obstacle. Ether was then administered, and two more attempts were made to introduce a bougie; the second was successful, the instrument passing into the stomach. The bougie could be felt to push something before it. When the patient recovered from the effects of the anæsthetic she could swallow much better, but still the attempt caused great pain and spasmodic cough.

Nov. 6th.—I saw her for the first time; the swelling of the face, neck, and chest was very great; distinct emphysematous crepitation could be felt extending to a short distance below the breasts and in all the swollen regions. The pain, which was of a spasmodic character and felt chiefly between the shoulders, was still severe; breathing rapid; speaks in a whisper; swallowing of fluids still painful; pulse good.

7th and 8th.—The emphysema slightly decreased, swallowing becoming less painful; voice strong again; tongue furred.

10th.—Able to swallow some meat; emphysema rapidly diminishing.

12th.—Feels nearly well; takes usual diet.

16th.—Discharged. It could now be seen how very greatly the face had been puffed up at first; on admission she had the appearance of a very bloated person, whereas she now is a very thin-faced woman.

Never having seen a similar case, I thought it worth while to record the above account of the patient's symptoms and accident. The piece of pork which caused the mischief was only just taken into the mouth, and consequently had not been at all chewed; it was all meat without any bone. It seems difficult to account for the supervention of surgical

emphysema; one would be inclined at first to ascribe it to some injury the result of attempts to pass an instrument, but there can be no doubt, from the patient's account, that the swelling was previous to all surgical interference; and, in fact, was the cause of the patient's friends seeking medical advice. It has seemed to me that the phenomena may be explained by supposing that the meat, when first suddenly bolted, lodged in the back of the pharynx, over the entrance to the air-passages; that this caused sudden and severe fits of coughing and spasm of the glottis; during these great expiratory efforts the trachea may have been slightly lacerated, or rather torn, and thus air would have been forced into the surrounding cellular tissue at each succeeding paroxysm of coughing; but I must confess that the explanation is not quite satisfactory, for one often sees patients afflicted with severe paroxysms of coughing and yet no rupture of the trachea takes place. The piece of meat could not have lacerated the œsophagus or trachea, for the patient is quite positive it was only lean without bone. The subsequent history of the case would be against the food having passed directly into the air-passages, although it might at first have lodged in the pharynx, and compressed the upper part of the larynx for a little time, then passed just down to the junction of the pharynx and œsophagus, whence it was pushed by the bougie into the stomach.

FOREIGN BODY IN THE ŒSOPHAGUS PASSED PER ANUM.

BY DAVID DAVIES, F.R.C.S. ENG., &c.

AN almost identical case to that published in THE LANCET of December 10th, 1881, has just occurred in my practice.

Wm. F——, aged twenty-six, married, a colliery clerk, came to my surgery on December 8th, at 5 P.M., in a violently agitated state, stating he had swallowed a plate with artificial teeth attached. He was suffering from acute dyspnœa and pain in the gullet, restlessly moving about, and feeling sure he was dying. On introducing a large pair of œsophageal forceps a foreign body could be felt about seven inches down the gullet. Failing to grasp the object with the forceps, though carefully and repeatedly tried, I gently pushed it into the stomach with a probang, to the immediate relief of the patient. He was recommended quiet, a constipating diet, &c. He called daily, and on December 13th brought with him the artificial plate, which he had passed per anum that morning without any discomfort, and of which the accompanying sketches are exact representations. He

Front view.

Back view.

stated that whilst playing with his child on the day of the accident, tossing it in the air and catching it again, he suddenly felt the plate, one hook of which had been broken off, and from which two false teeth had fallen, slip down his gullet, causing intense pain and difficulty of breathing. He has since entirely recovered, and resumed work, none the worse from his strange accident.

Aberdare, South Wales.

A DESPERATE attempt to assassinate Dr. John P. Gray, of Buffalo, U.S.A., was made on the 23rd ult. by a man who was evidently a lunatic. Dr. Gray had just returned from Washington, where he had been engaged with Mr. Corkhill in examining the medical portion of the bill of exceptions in the Guiteau case, and whilst sitting in his private office the maniac gained access to the room and fired a revolver in the doctor's face. The ball entered over the left malar bone, half an inch below the outer angle of the eye, and made its exit in the centre of the right cheek. Fortunately no important vessels were injured, and it is hoped that the outrage will not end fatally.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

ST. BARTHOLOMEW'S HOSPITAL.

NEPHRITIC ABSCESS; OPENED BY DR. HENSLEY'S METHOD, WITH ANTISEPTIC IRRIGATION; AFTERWARDS LAID OPEN AND DRAINED.

(Under the care of Dr. SOUTHEY.)

OLIVIA P——, aged forty-four, married twenty years. After the birth of her second child she had a succession of miscarriages over a period of two years; she then underwent some operation, and had never been pregnant since. Her catamenia ceased when she was thirty-nine. She had always been nervous and hysterical.

Two years ago she first complained of pain in her right lumbar region, and passed pus in her urine. She was then in the hospital under Dr. Southey's care. She remembered having been told that she had an abscess in her right kidney. (The ward-book of 1878 is missing, and her case cannot be referred to.) She left at her own wish, and some months afterwards an abscess opened in the middle of her right lumbar region, and discharged pus for a considerable time, during which her urine, by her own account, was free from sediment of pus.

She was again admitted on Dec. 30th, 1879, with symptoms of abscess in the right kidney, complaining of pain, and having a considerable drain of pus daily mixed with her urine. At the expiration of three weeks, much improved by rest in bed, sedatives, and suitable diet, she felt better, and claimed her discharge.

On Sept. 8th, 1880, she was admitted once more, and presented a large fluctuating tumour in her right flank, which was most prominent posteriorly, and from its aspect, superficial blush, tension, &c., indicated tendency to spontaneous opening in this situation.

Dr. Hensley kindly undertook the aspiration of the tumour by his method of washing with double cannula and current of antiseptic lotion, and thirty-six ounces of pus were thus withdrawn on Sept. 9th. On the 14th she was aspirated a second time, and fifteen ounces of pus were washed out of the abscess cavity by irrigation with forty-five ounces of a 1 per cent. solution of carbolic acid. A troublesome cough was her chief complaint, with slight bronchial catarrhal sounds over both lungs and very moderate expectoration. Her temperature was normal, respiration 24, but always quickened by nervous excitement when she was approached; her pulse too, when she was asleep, was about 84, but could hardly be counted, or was from 120 to 140 at Dr. Southey's visit. Urine, quantity about forty-five ounces daily, sp. gr. 1015, sometimes acid, more often neutral; always some pus sediment, but for some days never more than a drachm or two daily. Her appetite was good, all her functions well performed. On October 1st, as the pus in the urine was increasing and she was complaining of more pain and fulness in the tumour, this was aspirated a third time, and four and a half ounces, this time of stinking pus, were removed.

As this matter was offensive, when the necessity of further operation became indicated, as it did ten days later, Dr. Southey had a free opening made by Mr. Coates under an antiseptic spray; the edges of the wound were kept apart by gutta-percha tissue, and the wound was carefully syringed and dressed, and afterwards freely drained by a drainage-tube.

From Oct. 10th to Nov. 12th the urine averaged two pints daily, contained no pus, and was usually quite normal. The patient's temperature was maintained low, and her pulse fair.

Nov. 18th.—Temperature 99·2°. The antiseptic dressings had produced some irritation of the skin around the wound. The edges of this looked healthy. She had been lying on the affected side to secure more perfect emptying by drainage. Appetite fair; tongue always red and rather raw-looking; bowels regular; urine acid, sp. gr. 1017, slightly turbid, no albumen.

For a few days poultices were applied, then the wound was dressed with cotton-wool, carbolic oil, and tow. The discharge was sweet, and was reported not to exceed half an ounce a day.

Nov. 27th.—Temperature rose to 104·3°, and the discharge simultaneously diminished greatly, but was not pent-up. The wound was probed and found pervious. She complained of much pain along the lumbar nerves and down the back and front of both thighs. She was sponged with tepid water, and took a mineral acid draught three times daily. On pressure in right hypochondrium below the ribs, a larger flow of pus ensued. Temperature still high: morning, 101·2°; evening, 104·2°; pulse 140. Enlarged and painful gland noticed in right axilla.

On Dec. 2nd the urine again contained pus and a small amount of albumen. She passed on an average from forty to seventy ounces per twenty-four hours. The specific gravity varied from 1010 to 1017. Her temperature gradually subsided to normal, and she improved slowly, gaining strength.

She left the hospital at her own wish on Feb. 7th, still having a very slight, perfectly sweet discharge from the external fistula. The urine was of low specific gravity; the quantity was from two to three pints; albumen was occasionally present, with slight pus sediment. She was able, however, to be up and about.

Remarks by Dr. SOUTHEY. — I have been unable to trace the patient's case further. The propriety of extirpating the kidney had been discussed with Mr. Savory, who was of opinion that her condition did not justify so grave an operative interference; and her recovery under the alternative treatment by opening and drainage, after preparation of the abscess cavity by emptying and antiseptic irrigation, is at least important at the present time, when the capital operation of nephrectomy and its alternatives are being discussed.

MANCHESTER ROYAL INFIRMARY.

TRAUMATIC HÆMOTHORAX FROM AN INCISED WOUND OF THE THORAX; RECOVERY; REMARKS.

(Under the care of Mr. WALTER WHITEHEAD.)

JOSEPH B——, aged nineteen, a labourer, was admitted on Oct. 28th, 1881. The previous day, the patient and a friend had been amusing themselves by testing the merits of their penknives by the alternate hacking of one blade against the other, when by some misadventure the blade of his friend grazed and wounded the patient's chest. Not feeling any pain, he did not regard the accident as of any moment, and they continued their game for some time. Later on, however, the patient became conscious that something was trickling down his abdomen, and upon inspection he discovered that blood was proceeding from a small wound on his chest. Being seized with a vague uneasiness as to the consequences of the injury, he hurried to the infirmary, and was immediately seen by the house-surgeon on duty, who found, upon examining the chest, a small insignificant wound, a quarter of an inch in length, at right angles to and directly over the upper border of the fourth rib at its junction with the costal cartilage. The patient not appearing faint, and the bleeding being very trifling in quantity, the wound was dressed, and the patient allowed to return to his home. He experienced a sleepless night of great discomfort, and felt altogether ill on the following morning, when he applied at the infirmary again for further advice. A marked change was noticed in the man's appearance. His face was pale and drawn, and he presented the general aspect of one weak from loss of blood and anxious from the influence of impeded respiration. Blood was oozing from the wound, and on percussion the whole of the right thorax below the fourth rib was dull. The breath-sounds were inaudible below, and very faintly heard above this point. There had not been any cough, neither had he expectorated any blood. Fresh dressings were applied, and the patient was ordered to bed with instructions to remain absolutely quiet in the recumbent position, and to have simple liquid diet, with ice to suck *ad libitum*. The temperature rose to 101° in the evening.

The day after admission there was on the right side absolute dulness; decubitus on the affected side. The ribs were immobile; the intercostal spaces full, but not bulging. The breath-sounds were absent, and there was absence of vocal fremitus. The patient complained of a dull heavy pain in the right side of the chest. On the third day's sojourn in hospital the patient declared himself free from pain, and there was marked indications that the fluid in the pleural cavity was diminishing. There was now some resonance of tubular quality. On the eleventh day it was demonstrated that the dulness was owing to a hæmothorax by aspiration with the needle of an ordinary hypodermic syringe inserted between the fifth and sixth ribs, and the withdrawal of dark-coloured blood. From this date the recovery was rapid, and the patient left the hospital convalescent on December 14th, 1881, having been detained during the latter part of his stay in hospital on account of a skin affection, from which he had been suffering for many years.

Since his discharge he has been frequently seen as an out-patient, and examined, with the satisfaction of finding that all trace of the blood accumulation has disappeared, and that the lung is redistended and restored to the exercise of its normal functions.

Remarks by Mr. WHITEHEAD.—This case has many points of interest. In the first place it is no less rare than remarkable from its extreme simplicity and the uncomplicated natural recovery. It derives anatomical interest from the incision having penetrated apparently the pleura costalis without wounding the pleura pulmonalis, the absence of hæmoptysis, emphysema, and pneumothorax, though not conclusive evidence, lending strength to this inference. The locality of the injury suggested that the bleeding proceeded from a wound to the inferior intercostal artery in the third intercostal space, and the slow character of the bleeding renders it probable that the vessel had only been partially severed, unless the small size of the artery in the situation wounded may in itself account for the gradual development of the symptoms. The medico-legal aspect of the case is worthy of passing comment. Had the patient died at home, after his first visit to the hospital, there would probably have been one of those sensational and unfortunate results of an inquiry reflecting unjustly upon the casual department of our hospitals. The diagnosis of the case was unusually free from obscurity the day after the accident; at the same time it was necessary to bear in mind the possibility of latent pleurisy having existed previous to the injury, and even the evidence afforded by aspiration did not in itself exclude a latent hæmorrhagic pleurisy of old standing. These conditions were in part, if not wholly, rendered improbable by the fact that the patient was in perfect health immediately preceding the accident. This case may be studied in instructive contrast with that of Dr. Cayley, reported in THE LANCET, Nov. 12th, 1881, p. 828. The one an instance of pneumothorax from the puncture of the pleural cavity by a fishbone, and the other a hæmothorax from an incised wound, both cases deriving their clinical value from their unique simplicity and the unequivocal character of their course and treatment.

Medical Societies.

MEDICAL SOCIETY OF LONDON.

Lichen Planus affecting Mucous Membrane.—Ulceration of Phthisical Cavity into Intercostal Muscle.—Advisability of Enucleation of Axillary Glands in the Removal of Cancerous Breasts.

AT the meeting of this Society on March 27th, F. Mason, Esq., President, in the chair,

Dr. RADCLIFFE CROCKER showed a case of Lichen Planus affecting the Mucous Membrane as well as the Skin, and related the history of two others. The patient shown was a man aged fifty-nine. The disease presented its usual characteristics upon the skin and upon the glans penis, but upon the tongue were symmetrical white patches on each side of the raphé, and on the buccal mucous membrane white streaks extending from the parts adjacent to the last molar teeth to the lips. The other cases related presented similar characters as regards the mucous membrane of the cheeks, but only affected the sides of the tongue; the most interesting point was that this condition of the mucous

membranes preceded the skin lesions by some weeks in at least one of the cases. These white patches in connexion with lichen planus were first observed by Mr. Hutchinson, and were not mentioned by other authorities. Though only seen in a certain number of the cases, when present the symmetry of the patches on the tongue and the fern-like branching of the white streaks were the points especially noticeable. The possibility of their preceding the skin lesion gave them a diagnostic importance. Usually they did not require separate treatment.—The PRESIDENT had noticed similar patches, but had not identified them with lichen planus. Might not vulcanite tooth-fittings or syphilis have an agency in causing them?—Dr. S. MACKENZIE said the affection was more frequent in women than men. The white patches were not an essential element in the condition. There was good reason to believe that the female case was an instance of lichen planus, commencing on the mucous membrane. Arsenic was of benefit in these cases. He alluded to the occasional coincidence of leucoderma and lichen planus.—Dr. SANGSTER said that syphilis was a very doubtful cause of thickening of the oral mucous membrane. He believed these cases to be lichen planus.—Dr. H. STOWERS asked whether Dr. Crocker had seen Dr. Tilbury Fox's cases? In his experience the arsenical treatment was decidedly beneficial.—Dr. CROCKER, in reply, said that he had not seen the radiating, leaf-like, white patches on the tongue, except in cases of lichen planus. As regards causation, the female patient had no teeth in the neighbourhood of the white patches. He believed the disease was most common among women, and had not seen leucoderma associated with it. His first patient was treated by gentian and magnesia, with thymol locally. One patient of his could not take arsenic, but was treated with oil of pine locally. Such local stimulation was of use, with arsenic as an adjuvant when tolerated. Dr. T. Fox used inunction of olive oil and mineral acids internally.

Dr. ROBERT LEE exhibited an Improved form of Draft-steam Inhaler, so constructed as to admit of the regulation of the temperature of the vapour according to the amount of air admitted with it.

Dr. GILBART SMITH read notes of a case of large Phthisical Cavity with Ulcerous Openings through the Intercostal Muscles. The case was that of a man thirty-five years of age, who before admission to the Royal Hospital for Diseases of the Chest, in November, 1881, had suffered for about a year from chest symptoms. He was much wasted, and suffered from cough, feverishness, and night-sweats. There was flattening and diminished expansion of the left side of the chest, and bulging of interspaces (especially second and fourth, near sternum), with expiration, with signs of excavation over the greater part of the left front; diminished vocal resonance, absolute dulness at base, and distinct ægophony; exaggerated breathing over the right lung. The heart's apex was not displaced. The breathing became more cavernous over the left side, at apex being decidedly amphoric. Metallic tinkling and the bell-sound were present, with increased basic ægophony. An exploratory puncture was made below the level of dulness, but no serum or pus was withdrawn. About a month after admission he complained of severe pain in the region of the intercostal bulging, the expectoration continuing abundant and muco-purulent. On Jan. 16th he died suddenly of hæmoptysis. At the autopsy, on reflecting the skin and muscles from the left side of the thorax, two perforations were exposed, passing through the second and fourth interspaces; and on removing the sternum the lung was found to be universally adherent, and to be entirely excavated. The upper half of the large cavity had for its walls the pleura, not much thickened, and a very thin layer of pulmonary tissue. The walls were thicker below, but there was no demarcation between the lobes. The inner surface of the cavity was traversed by fibrous bands, and bronchi opened freely into it. The right lung was hypertrophied and contained masses of tubercle in the upper lobe. Dr. Gilbart Smith remarked on the extent of the cavity and its rapid formation, due largely, he believed, to the early occurrence of general adhesive pleurisy; also the absence of hæmoptysis, notwithstanding pneumonic destruction of so large an area, until the final out burst, which may have proceeded from the opposite lung; and on the ulcerous openings through the intercostal muscles with the peculiar and rare physical signs associated.—Dr. DE HAVILLAND HALL asked if there was much expectoration.—Dr. S. MACKENZIE asked if fetor was present, and whether the characters of the walls of the cavity suggested gangrene. The infrequency of such perforations was due to the thick pleural adhesions generally met with over cavities. He attributed the bulging during expiration to the cavity being closed by a valve-like structure.—Dr. I. OWEN referred to a specimen in St. George's Hospital Museum of a large basic cavity which had been tapped in another hospital in mistake for an empyema, as illustrating the difficulty of diagnosis and the rapid growth of such cavities.—Dr. GILBART SMITH, in reply, said the expectoration was profuse, but not fetid. He explained the bulging noticed to the yielding of the weakened wall during expiration. He had recently met with a case resembling that mentioned by Dr. Owen, in which he believed a basic cavity was tapped in mistake for empyema.

Mr. PEARCE GOULD read a paper on the Advisability of Enucleating the Axillary Glands in Cases of Removal of Cancerous Breasts (see p. 560).—The PRESIDENT suggested that the word "necessity" should be substituted for "advisability" in the title of the paper. The difficulty was to carry it out in practice. In his experience cases of recurrence of cancer of the breast were rare. He seldom saw such cases again after primary excision.—Mr. ED. OWEN pointed out that the surgeon was often compelled to operate on scirrhous mammæ, and knowingly to leave implicated axillary glands behind, and it occasionally happened that glands which were enlarged before the time of operation subsided afterwards. All practical surgeons were agreed that the entire mamma should in every case be extirpated; that there must be no partial operations, and Mr. Gould had advanced this principle still further in advocating removal of glands, whether enlarged or not.—Dr. COUPLAND remarked that the principles laid down in the paper were borne out by morbid anatomy. Tissues apparently healthy to the naked eye might contain the germs of cancer, and some cases of long-delayed recurrence could only be explained on the view that the organs were infected at the time of the primary extirpation. A remarkable instance of this was brought before the Pathological Society in 1873 by Dr. Murchison, where the patient died from recurrent sarcoma of the liver eight or nine years after the complete removal of the primary tumour in the orbit. Not a few instances occurred—e.g., in cancer of the tongue and lip, as well as of the breast—where, after operation, no recurrence *in loco* took place, but ultimately recurrence in glands and internal viscera proved fatal.—Mr. PURCELL believed that the cicatrix left after enucleation of the axillary glands was a great source of subsequent œdema of the arm. Cases occurred of the subsidence of enlarged glands after removal of the primary cancerous growth. Such glands could not be cancerous, and it was important to know how to make the distinction between the two forms of enlargement.—A VISITOR remarked upon adhesion of the growth to the skin as a test of the implication of lymphatic glands, and urged that in all such cases the lymphatic vessels as well as glands should be removed.—Mr. REEVES referred to the late Mr. C. Moore's practice, of commencing to operate on the axillary glands, and abandoning the operation if he found them beyond removal; and he also alluded to Professors Billroth and Gross's practice. He had seen many cases of local and distant recurrence; and, on the other hand, he knew of five cases which had lived from five to seven years after operation without recurrence.—A MEMBER said he had often seen cases of recurrence after excision of the breast, and had seen good results from a second removal. He agreed with Mr. Gould's dictum, and differed from Mr. Purcell as to ill effects resulting from removal of axillary glands.—Mr. BLACK alluded to the case under Mr. John Wood's care, of recurrence in the rectum ten years after removal of the breast.—Dr. CULLIMORE mentioned a case of recurrence after seven years.—The PRESIDENT knew of a case under Sir W. Fergusson, where the cancer recurred fourteen years after primary removal.—Mr. GOULD, in reply, said that operations for cancer were of value even when recurrences in internal organs occurred, as the distress caused by such growths was so much less than that of the external growths. He would always remove enlarged glands from the axilla when possible, and the case he had related, in which the glands were found to be cancerous, but were not so to the naked eye, had deeply impressed him; so that he would in future clear the axilla of glands, whether enlarged or not. A similar case to that had recently occurred to him. Although in a few cases innocently enlarged glands occurred, no harm could be done by removing such glands.

MEDICAL OFFICERS OF HEALTH SOCIETY.

A MEETING of this Society was held on Friday, March 17th, Dr. J. W. Tripe, President, in the chair.

Dr. TRIPE read a paper "On the Necessity for an Alteration in the Laws respecting Revaccination." His object was to show that the age below which payment cannot be made by the guardians to district vaccinators for revaccination is too high. In the memorandum of the Local Government Board, dated October 17th, 1876, the age at which revaccination is recommended is from fifteen to eighteen years, but when an epidemic of small-pox is prevailing, the memorandum states that the age of fifteen should not be waited for; then the public vaccinator may charge for the revaccination of all persons not under twelve years of age, who have not been before successfully revaccinated; at non-epidemic times, fourteen years is the age limit for which payment can be made for revaccination. Dr. Tripe had found this limit to act prejudicially in his district, and with a view to gaining further information, he recorded the condition of vaccination and the age of all persons in his district attacked with small-pox during the year 1880–81. Of 1075 vaccinated persons 0·5 per cent. were under one year of age; 6 per cent. from one to five years; 10·9 per cent. from five to ten years; 16 per cent. from ten to fifteen years; 33·9 per cent. from fifteen to twenty-five years; 19·2 per cent. from twenty-five to thirty-five years; 8·8 per cent. from thirty-five to forty-five years; 4·7 per cent. above forty-five years of age. Of 160 unvaccinated persons, 25 per cent. occurred among children under one year of age; 24·4 per cent. from one to five years; 20·6 per cent. from five to ten years; 12·5 per cent. from ten to fifteen years; 14·4 per cent. from fifteen to twenty-five years; and 3·1 per cent. above twenty-five years. A comparison of the number of vaccinated persons attacked, with the population of Hackney district, showed that in proportion to population the percentage of those who suffered up to the age of five years was only 6·5 per cent., against 12·9 per cent. of population; whilst at five to ten years of age it was 10·9 per cent., against 11·1 per cent. of population; at fifteen to twenty-five years it was 33·9 per cent., against 20·4 per cent. of population; at twenty-five to thirty-five years it was 19·2 per cent., against 15·8 per cent. of population; and above thirty-five years of age the percentage of those attacked was below the percentage of population of that age living in the district. Among the unvaccinated under five years of age 50 per cent. occurred, against 12·9 per cent. of population; from five to fifteen the percentage of attacks exceed the percentage of population; from fifteen to twenty-five the position is reversed. The protection afforded by vaccination before the passing of the Amendment Act, 1871, diminished before ten years of age was reached. An examination in 1880-81 of a school of 197 children under twelve years of age showed that 29 had bad marks, 7 no marks whatever, making 20 per cent. who were unprotected against small-pox. The marks of those under seven years of age were much more visible. Dr. Tripe was informed subsequently that the 36 children were afterwards successfully vaccinated. Under these circumstances the author felt that he had made out a good case for the reduction of the age at which guardians may be empowered to pay district vaccinators for the revaccination of children whose vaccination marks are imperfect. He proposed that the age should be lowered to twelve as regards all children, and to ten amongst those who were living in an infected place. Whether revaccination would afford reasonable protection in future life he was not prepared to say, but he thought it better that people should be vaccinated three times rather than run the risk of contracting small-pox. — Dr. Bristowe, Dr. Corner, Dr. Moore, Dr. Browning, and Mr. Shirley Murphy took part in the discussion which followed this communication.

Mr. SHIRLEY MURPHY made some observations on the subject of the position of legislation concerning Metropolitan Bakehouses. The Bakehouse Regulation Act, 1863, was repealed by the Factory and Workshops Act, 1878, which came into operation on January 1st, 1879. The sections in the former Act relating to the proper cleaning and limewhiting of the bakehouse, to its ventilation, and to the keeping of it free from effluvia arising from any drain, privy, &c., together with the prevention under limitation of the use for sleeping purposes of a room on the same floor as the bakehouse, are embodied in the latter Act. But the powers which Section 6 of the Bakehouse Act gives to the health officer and to the inspector of nuisances to enter the bakehouse at all times during the hours of baking for the purpose of inspection, have not been incorporated in the Factory and Workshops Act, and therefore the Sanitary Authority now have no more concern with bakehouses than with any ordinary dwelling house in their district. The duty of inspecting bakehouses as such has now devolved upon the factory and workshops inspector. Section 4 of the recent Act provides that a factory inspector shall give notice to the Sanitary Authority of any "nuisance" which he may find to exist in the bakehouse, and it then becomes the duty of the Sanitary Authority to take proceedings; but it will be seen that although this authority may still be used for the purpose of remedying an evil which already exists, their influence in preventing the occurrence of any nuisance, an influence which alone can come from constant inspections, has ceased. Mr. Murphy brought this subject before the Society with a view to eliciting an opinion as to how far the existing arrangements for the inspection of bakehouses fulfilled the conditions required, not only to keep the inmates of the bakehouse in good health, but to prevent the distribution to the public of bread made under conditions not conducive to the public health. But recently the duties relating to the prevention of disease produced by the distribution of infected milk had been made to devolve upon a body which had not even the advantage of medical aid in the performance of this responsible office. It is a subject for regret that the medical aspect of matters so intimately related to the public health as the distribution of a food-supply is being lost sight of by the Legislature. So far as his own district was concerned he could find no evidence that more than 37 per cent. of the bakehouses had been visited by the factory inspectors since the last Act came into force. He was led to doubt whether the inspection of bakehouses could be as well carried out by a central authority, with the very few inspectors at their command, as by the local authorities, who, although they had perhaps not as large a staff as might be considered desirable, yet had the advantage, which Mr. Murphy considered most important, that the inspection was under the supervision of the medical officer of health. A discussion on this subject followed, in which Mr. Lovett, Mr. Wynter Blyth, Dr. Browning, Dr. Bristowe, and Dr. Tripe took part.

Dr. CORNER called attention to the prevalence of Whooping-cough in the metropolis; and the question was raised whether the sanitary authority ought not to take proceedings against those who wilfully exposed in public places children suffering from this disease, or whether a letter should be sent to hospital authorities cautioning them not to treat such cases in the out-patient department. It was stated in the discussion which followed, that the disease was often not recognisable until it had existed a fortnight, and therefore it could hardly be dealt with as other infectious diseases; also that, as a rule, cases of whooping-cough did not attend out-patient rooms, but were attended in their own homes.

MIDLAND MEDICAL SOCIETY.

AN ordinary meeting was held in the Birmingham Medical Institute on March 15th, Mr. J. Manley, President, in the chair.

Dr. SIMON exhibited a case of Well-marked Pseudo-hypertrophic Paralysis in a child twelve years of age.

Mr. HUNT showed the Kidneys, Ureters, and Bladder of a child three years of age, upon whom he had performed litbotomy six months before. Recovery was complete, but the patient was subsequently readmitted to the Children's Hospital and died of pneumonia. At the necropsy the left ureter was completely occluded by two calculi, of which during life there had been no symptom.

Mr. GILBERT SMITH introduced a waggoner, aged forty-nine, suffering from Tinea Sycosis. A few days after being shaved by a barber the patient stated rings appeared at those parts of the face where soap had been applied. Six weeks later, on applying for treatment at the Skin and Lock Hospital, large "fairy rings" extended over the whole of the lower part of the face. A considerable number of characteristic broken and twisted hairs were to be seen in the moustache and beard, well covered with the trichophyton

fungus. Under the microscope spores were found in abundance. Mr. Smith remarked on the extreme rarity of such a well-marked specimen.

Dr. MALINS showed a very large Ovarian Cyst that he had removed that day from a woman fifty years of age.

Mr. LAWSON TAIT showed five specimens of the Uterine Appendages, removed for Pyosalpinx.

Dr. HICKINBOTHAM read a paper upon the Accidental Hæmorrhage of Advanced Pregnancy and Parturition. After reviewing the opinions of the older and also of the more modern obstetricians, Dr. Hickinbotham expressed his belief that a large number of the cases quoted as accidental hæmorrhage really belonged to the class of placenta prævia, the after-birth being attached to the upper part of the lower zone of the uterus, which was unavoidably disturbed at or near the time of labour. Dr. Hickinbotham then suggested that in those extreme cases in which so much blood had been lost as to place the patient in a condition of such dire collapse that even the most cautious attempt at delivery by forceps or bimanual version would almost surely kill by shock, the injection into the uterus of a stream of very hot water should be made. The heat so applied would be a most valuable stimulant to the general nervous system, as well as a direct hæmostatic and excitor of uterine contraction. He failed to see a single element of danger in the procedure which did not also exist in post-partum hæmorrhage.

Reviews and Notices of Books.

Cutaneous and Venereal Memoranda. By HENRY G. PIFFARD, A.M., M.D., Professor of Dermatology, University of the City of New York, &c.; and GEORGE HENRY FOX, A.M., M.D., Surgeon to the New York Dispensary, &c. Second Edition. New York: William Wood and Co.—This is one of those little compilations variously named epitomes, memoranda, &c., of which quite a number have made their appearance in recent years, on special branches of medicine. The work under notice is directed to inculcate in students the principles and the main accepted facts of dermatology and venereal diseases; but we see that Dr. Piffard, who wrote the bulk of the work, has introduced his own peculiar views on many subjects—e.g., on the existence of a rheumide diathesis, the separation of herpes labialis, preputialis, &c., from the same category of disease as herpes zoster, and the causation of impetigo contagiosa by the fungus of vaccination crusts, with which readers of his large work will be familiar. We cannot recommend the little book as a good one for the purpose for which it is intended; for the descriptions of disease are poor, the etiology is far too lightly touched on, the directions for treatment are meagre, and the formulæ scarcely so copious as they might be, or so well selected. Thus it is hardly satisfactory to be simply told that the etiology of purpura, molluscum fibrosum, and the circumscribed and diffuse forms of scleroderma are unknown. Again, we see no mention of the existence of filariæ in elephantiasis Arabum, or of the etiology of herpes zoster, except an incidental reference to the development of the eruption along the course of a nerve.

Cyclopædia of the Practice of Medicine. Edited by Dr. H. v. ZIEMSSEN. American Translation. 1881. *General Index.*—The addition of a good index to a work of the magnitude of Professor Ziemssen's Cyclopædia, which has recently been completed, and which runs to twenty volumes, is, it need hardly be said, almost an essential. It is true that each volume has been supplied with a tolerably good index, but the labour of looking through so large a number of indices for anyone who is engaged in writing upon a special subject is appalling, and the saving of labour effected by gathering the separate indices into one volume and placing the subjects in alphabetical order is obvious. The present volume fulfils its purpose very well. It forms a book of upwards of 1000 pages, is printed in good clear type, and has the very excellent quality of an index, so far as we have tested it, of being correct. It is not easy to understand why all the contents of the separate indices have not been incorporated in this general index; but on the whole it is fairly comprehensive, and will certainly prove extremely serviceable to all who possess this valuable but somewhat expensive series of volumes on practical medicine.

Zeitschrift für Biologie. V. M. v. PETTENKOFER and C. VOIT. Band xvii. Heft 4.—This part contains three articles neither of which lends itself easily to being abstracted. The first is a memoir by H. Weiske, Kennepohl and Schulze, on the significance and behaviour of asparagin in the animal economy; a second, by Mendes de Leon, on the composition of human milk; and the third is on the time occupied in the metabolism of the animal body.

Report of the Proceedings of the Fifth International Pharmaceutical Congress, London, 1881. London: Pharmaceutical Society of Great Britain. 1882.—This work, edited by Dr. Paul and Mr. Passmore, contains a record of the proceedings of the International Pharmaceutical Congress, held in London in August last. The previous meetings of the Congress have been at Brunswick, in 1865; at Paris, in 1867; at Vienna, in 1869; and at St. Petersburg, in 1874. At the first of these meetings, now fifteen years ago, the desirability of establishing uniformity in the pharmaceutical preparations of all countries was generally recognised. At the Paris Congress the subject was again considered; and although the utility of a universal Pharmacopœia was acknowledged, it was deemed advisable to confine the attempt to the most potent and generally used remedies. At the Vienna Congress it was reported that a commission in Paris was engaged in the preparation of a universal Codex. At the next Congress in St. Petersburg the draft project drawn up by the Société de Pharmacie de Paris was laid on the table; and at the close of the Congress each delegate was requested to take a portion of the manuscript for examination and annotation. The execution of the work was never completed, and the further prosecution of the undertaking by the International Pharmaceutical Congress remained in abeyance until it was resumed by the discussion now published. The subjects which occupied the attention of the Congress in London may be classed under four heads: the International Pharmacopœia, Pharmacopœial Revision, Pharmaceutical Education, and the Relation of the Pharmacist to the Medical Profession and to the Public. In the report the English version (original or translated) of the communications on each subject is placed first, the German follows, and lastly the French. In reporting the discussions, each speech has been given in the language employed by the speaker, and where this was not English, an English translation has been supplied. The work is well done, and reflects credit on the editors.

Proceedings of the British National Veterinary Congress, 1881. Sittings, July 20th and 21st. Printed by Hazell, Watson, and Viney, London and Aylesbury.—The most important question discussed at this Congress, the report of which, like all the rest of the proceedings contained in this volume, is given verbatim, was upon "The Influence of Disease of the Lower Animals on the Health of Man." It opened with a paper by Professor Robertson, dealing with the question in general. Professors Axe and Duncan contributed most valuable and suggestive speeches, the latter concluding with a resolution affirming the importance of the study of comparative pathology. Mr. M'Kinder of Peterborough raised the practical question "Whether or no the milk from tuberculous cows when given to man is likely to produce phthisis?" and quoted a case which seemed to answer this in the affirmative. The chairman, Mr. Fleming, also dwelt upon this subject, and pointed to the startling evidence that was being accumulated on this head. Dr. Creighton, who was present, stated his belief in the identity between some forms of human and

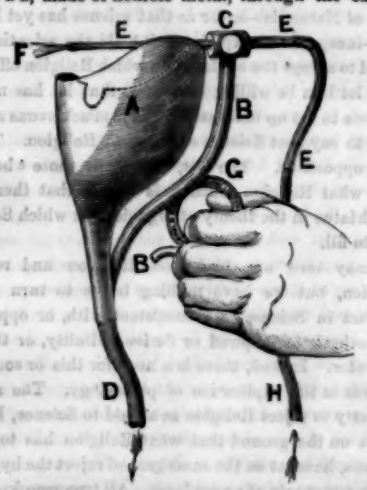
bovine tuberculosis, and alluded to the very great prevalence of tubercular disease in cattle. Dr. Osler of Montreal alluded to typhoid fever in pigs, and to the doubt that exists whether the flesh of animals so diseased was fit for human consumption. Although we have singled out this subject because of its paramount importance, others hardly less notable were discussed, and before the meetings closed it was unanimously decided to initiate a British Medical Veterinary Association. It is evident that veterinary pathology is gaining ground in this country, and its progress is one of the most encouraging symptoms of the time.

The Life Almanack and Diary of the Briton Life Association, Limited. 1882.—This little book contains a good deal of information on the subject of life assurance, with other matter of a cognate kind. The history of the movement having for its object the payment of medical examiners by the companies instead of by the insurers, and which was successfully inaugurated by the establishment of the New Equitable Life Assurance Society nearly thirty years ago, is given in this Diary. An Appendix comprising the data usually to be found in almanacks concludes this handy little volume.

New Inventions.

THE SIMPLEX EAR IRRIGATOR.

THIS instrument is the outcome of an endeavour to obviate something of the difficulty, inconvenience, and discomfort which attend the operation of cleansing the auditory meatus by the ordinary syringe or its modifications. The instrument may be described as follows:—A reservoir, A, in shape like a quarter of a sphere, whose flattened surface is adapted to the side of the neck below the ear, so that the lobule of the ear projects over the edge of the reservoir; fluid issuing from the meatus thus flows into A, and escapes by the outlet pipe D (to which india-rubber tubing is attached), into the jug or basin placed to receive it. From D springs the arm B B, made of flexible metal, through the extremity



C, of which passes the tube E E, and to which are also attached the rings G, by which the apparatus is held in position. The tube E E, of uniform circumference throughout its length, slides through the head, C, of the arm, B B, and is fixed in position by a small set-screw; it can be entirely withdrawn from C for the purpose of being cleaned or packed. To E E E is attached the light rubber-tube H, connected at its other extremity with the syringe or syphon, by means of which a stream of water flows through E E into the meatus. In practice, the patient is seated at the corner of a table, on which stand the basin containing the water or other fluid which is to be injected into the meatus, and a jug or basin for collecting the effluent water; the extremity of the rubber-tube D is passed into the latter; the rubber-tube H (from the simplex syringe already standing in the basin of injecting fluid) is slipped on to the tube E E, and a little of the fluid forced through it so as to fill E E, and thus prevent the unpleasant impingement of air which might otherwise occur when the instrument was first used. The tube E E is then almost withdrawn from C, and the instrument is held in its proper position against the side of the neck, the lobe of the ear falling over the flat side of the reservoir. The flexibility of the arm B B allows to C lateral or vertical motion adapted to any or either ear, so that the tube E E can be passed into the meatus as far as is necessary or convenient, and fixed by a turn of the set-screw. Then, the instrument being held in position by one hand, as in the figure, the other hand working the simplex syringe attached to H forces the fluid, in an easily regulated stream, into the meatus, whence it flows into A, and thence, by the tube D, which is large enough to allow any fragment of cerumen to pass without obstructing the outflow, into the vessel placed to receive it. For the motive power needed I usually employ an Arnold's simplex syringe; it is portable and always ready for use; but a Higginson's or Kennedy's syringe, if at hand, can be made to answer the purpose quite well. If a perfectly continuous stream is desired Messrs. Arnold supply a double action simplex syringe; or the same end may be attained by making the tube H syphon the fluid from a vessel placed on a shelf or bracket at the desired height above the patient's head. To be able to dispense with the cumbrous swathing of towels, and with the unpleasant wetting which they too often fail to prevent, with the basin which must be held beneath the ear, and with the perpetual withdrawal, refilling, reintroduction, and emptying of the ear-syringe in ordinary use, are no small advantages for an instrument, which has the additional claims of being light, very portable, easily cleaned, always in order, and not expensive. I have found it very efficient; it does not terrify young and sensitive children, and it can be used in almost any position of the patient, either in or out of bed. It requires only one pair of hands, and, indeed, with a little practice patients can easily learn to use it for themselves.

I have to express my thanks for much valuable and courteous assistance to the makers, Messrs. Arnold and Sons of West Smithfield, who supply the instrument complete, with the requisite tubing.

Hertford. C. E. SHELLY, M.B. Cantab.

MATTHEWS' PORTABLE BINAURAL STETHOSCOPE.

IN this elegantly constructed instrument the makers have supplied a want which has always been felt by those who use the binaural instrument. It is, as ordinarily constructed, so large and cumbrous, that it is impossible to carry it about with comfort. The stethoscope before us is about half the size of the ordinary binaural, and when detached in three portions, the chest-piece being removable as well as the metal ear-tubes, it is packed away in a case 6 in. by 3 in. in dimensions. Another improvement is the substitution of the usual elastic band and hinge-joint between the two metal tubes by an upward spring joint, which we have found from a trial of the stethoscope to exert no undue pressure on the ears, and, indeed, to render its employment more comfortable than the band does. Further, we are very pleased with the conducting capabilities of the instrument, which well stood the comparative tests applied to it practically in cases of pulmonary and cardiac disease. With an extra chest-piece small enough to lodge in the intercostal spaces of a child, we think this stethoscope would be found of very great service, and become widely popular. Its price, we are informed, is 21*s.*, and it is made by Messrs. Matthews, of Carey-street.

THE LANCET.

LONDON: SATURDAY, APRIL 8, 1882.

A LETTER signed "Veritas," which appears in another column, is one of those protests which are from time to time wrung from thoughtful members of the medical profession by the taunt, or it may be the personal impression, that what we arbitrarily call "Science" is responsible for a growing scepticism in matters of religion. It is of course a fallacy, as stated, that "a scorning scepticism appears to be the leading principle of modern thought." Neither unbelief nor doubt can be *principles;* but the phrase may be accepted as indicating the view taken by one, and not the least respectable, section of thinkers of the intellectual position and bearing of the other. It is the fact that scientists too commonly appear, or affect, to make scepticism in religion an integral part or "principle" of their belief in science. It has been alleged, and we do not see our way to deny, that this is to some extent the fruit of a defect in modern education: namely, the neglect of the more idealistic departments of intellectual work—to wit, the study of metaphysics, logic, and the higher mathematics. It is an inevitable tendency of specialism in thought, and particularly in mental observation carried on with the aid of instruments and appliances of precision, to exclude the unknown and deny its existence. This we take to be the *fons et origo* of the so-called scepticism which prevails among men of science. It is a weakness rather than a fault.

There is a strain of romance or heroism in every mental organism, and that which lurks in the mind of the *savant* finds its unconscious expression in the repudiation of all that cannot be demonstrated. He is so accustomed to work by the analytical method that he first ignores, and then becomes incapable of the synthetical. He is unable to find life or a soul in man, and therefore he concludes that the being he has taken to pieces in his scientific method must needs have been put together without life or a soul. It is true that he cannot make a man, although he can, so to say, unmake one, by his methods or processes. There is something wanting to vivify the elements his analytical method has enabled him to discover and taught him to bring together, before these can be combined; but he scorns the inference that this *something* must—or let us say may—be external in its origin, because it is alien to his nature as a scientist and inconsistent with his habit of thought to admit any presumption into his theory—least of all, to use a presumption as a corner-stone of the edifice.

We cannot altogether blame the investigator of natural *facts* because he declines the proffered aid of what he deems a *fiction* to help him out of a difficulty. What we do condemn is the folly of refusing to admit that which must be clear to the inner consciousness of every man of science—namely, that it is just as much or as little a fiction—using that term in its proper sense—to hypothecate the existence of an unseen and undemonstrable property of life in protoplasm as it is to assume that life is like the Promethean fire—something added to, or brought to bear upon, organised or organisable matter from without. The scientist draws as largely on fiction for the solution of his difficulty when he affirms that life is an attribute or property of protoplasm, as the non-scientist can do when he accepts and adopts the doctrine that man lives because the Creator breathed into his nostrils the breath of life, and that *all* life, whether that of plants or animals, came from GOD. In short, Science gains nothing in point of precision by scepticism in matters of religion. The scientist simply draws on conjecture in his own province to compensate him for the lack of that aid which is offered him from the province of revelation. The professed "Materialist" has no ground for the belief he hugs that he is a stronger-minded and more rational man than his brother who believes in the Bible story of creation; because the scientific hypothesis of life in protoplasm is equally incredible if we come to demonstrable facts, and requires not less "credulity" if we speak of inferences. This is the sum of the whole dispute of Science *versus* Faith.

As a matter of fact we do not think there are many, if any, of the true workers in Science who are absolutely unbelievers, or *dis*believers, in the unknown. There is, as we have said, a heroic impulse which leads men to deny what they cannot understand, but at heart they must, and do, make this reservation, "so far as our present knowledge extends;" and this reservation is the very seed and essence of faith. It is not faith *in esse*—in a state of fructification,—but it *is* faith *in posse*, being a latent but vital germ of belief in the possibility of further knowledge which shall satisfy the need of the mind. If this be so, and we are convinced that it is, why not lay aside the affectation of unbelief, and admit in words what is already felt in the inner consciousness—namely, that life is a mystery, and that the Science of Nature is—so far as that science has yet been explored—incapable of explaining it? If the scientist is not prepared to accept the explanation which Religion offers him, at least let him be willing to confess that he has no better hypothesis to set up in its stead. It is mischievous and misleading to say that Science antagonises Religion. There is no such opposition. The fact, as regards those who do not believe what Religion teaches, is simply that there is for them a hiatus in the theory of organisation which Science is unable to fill.

We may turn our backs on Religion and repudiate Revelation, but we have nothing better to turn to. No single fact in Science is inconsistent with, or opposed to, the hypothesis of inspired or derived vitality, or the work of a Creator. Indeed, there is a need for this or some other hypothesis in the explication of physiology. The scientist is at liberty to reject Religion as an aid to Science, but if he does this on the ground that what Religion has to offer is hypothesis, he must on the same ground reject the hypothesis of life as a property of protoplasm. All true men know this; and when in their writings and utterances they indulge in the romance of Scepticism, the position they assume is one-sided and untenable, because they are in truth just as sceptical as to the explanation which Science has to offer with regard to the mysteries of origination and life, as they can possibly be in relation to the explanation which Religion proffers, and on precisely the same grounds. If the undemonstrable is to be denied and repudiated on the one side,

it must be denied and repudiated on the other also. This may be submitted as the negative view of the subject suggested to us. We shall have a few remarks to offer on the positive view at another opportunity.

THAT absorption is capable of being effected by the peritoneum has been demonstrated by many experiments, both physiological and pathological. Milk or other bland fluid injected into the peritoneal cavity of animals soon disappears; the blood certainly effused during and after various operations soon vanishes, and even solid substances, after undergoing a kind of fatty degeneration, break down and disappear. Large quantities of albuminous fluids may, however, as in ascites, remain in its cavity for many months or years without apparently undergoing much change, though we may conjecture that a constant interchange is taking place in such cases between the effusion and the vessels, preserving the effused fluid from those changes which might be expected to occur in a substance of such unstable composition as albumin when kept at the temperature of the body, even without the direct access of oxygen. In such cases, however, the effusion occurs slowly; it has only slowly distended the peritoneal cavity, and the concomitant lesions of the circulatory system in the immediate neighbourhood of the peritoneum explain to some extent the formation and persistence of the effusion. The behaviour of the healthy peritoneum when a considerable quantity of an albuminous fluid is suddenly injected into it, the channels by which it disappears, the relative importance in this respect of the veins of the lymphatics, and the course subsequently pursued by the absorbed albumin, present many points of interest, which have been elucidated by the experiments of MM. DUBAR and RÉMY, and which appear in the part just issued of the *Journal de l'Anatomie*. The animal they employed was the rabbit, and upwards of a hundred carefully conducted experiments were made. The rabbit is well adapted for experiments of this nature, since its peritoneum is nearly destitute of fat, and, at the same time, stains well with nitrate of silver. Great care was taken not to wound the intestine, and to inflict as little injury on the peritoneum as possible. In each experiment from thirty to one hundred grammes of fluid, at blood heat, were injected in the course of five minutes. On withdrawing the pipe of the injector, a small pair of bulldog forceps was applied to the minute orifice to prevent the escape of fluid. These experiments showed that albumin in solution is certainly absorbed by the peritoneum, for the whole of the liquid injected had disappeared in the course of a period varying from twenty-four to thirty-six hours, and at the same time the presence of albumin could be demonstrated in the lymphatic vessels and in the thoracic duct by the usual tests, though in rabbits that had not been injected no appreciable coagulation could be produced by heat, alcohol, or copper sulphate in the contents of these vessels after death. Lastly, the absorption of the albumin was demonstrated by its rapid appearance in the urine, which was apparently due to the circumstance that such absorbed albumin does not accumulate in the serum of the blood. In all cases where the solutions of albumin were fresh and pure, they were well borne and inoffensive. No pathological lesions were observed as a result of the injections; the epithelium of the serous membrane remained unaltered, and the endothelium of the bloodvessels and lymphatics could be easily impregnated with nitrate of silver. These experiments further showed that, as generally accepted, there are two great channels of absorption — the lymphatics and the veins; the part covering the phrenic centre being the point where the most rapid absorption takes place, and the exclusive point for the entrance of granules into the lymphatic system. It was, moreover, found practicable to stain the lymphatic vessels, and even to stain the valves alone. At the level of the phrenic centre of the diaphragm there appear to be two irregularly disposed superficial plexuses of lymphatics, one ventral and the other pleural; and there is in addition a deep plexus, the meshes of which are more regular, between the vessels. The vessels of the superficial plexus on the under surface of the diaphragm are only separated from the peritoneal cavity by two layers of epithelial cells, but in spite of the closest attention, the authors of the paper were unable to discover any stomata. Granules appeared to enter the lymphatics by penetration. The thoracic duct, when distended with colourised albuminous solutions, attained a volume almost as great as the adjoining aorta. They found that the single layer of flat cells forming the endothelial lining of the sinuses of the lymphatic glands absorbs colouring matters, and that there are currents which pass from the lymph paths in the ganglia to the bloodvessels. The liver frequently presented numerous emboli, which appeared to result from the direct passage of coloured liquids and grains of colouring matter from the peritoneum into the portal vessels. These emboli contained numerous coloured leucocytes. The brain, lungs, and spleen presented but few emboli. The kidney permits the fats and carmine to filter through it. This filtration occurs chiefly in the region of the pyramids and of the tubes of HENLE. The sebaceous glands of the skin appear to be the special emunctories of carmine. Finally, leucocytes play an important part in the transport of colouring matters, of the morphological elements of pus and of the vibriones that are attached to or contained within them. They always exert a powerful influence on the formation of emboli. Such, stated very succinctly, are some of the chief results of MM. DUBAR and RÉMY'S observations.

IF any additional arguments are required to emphasise the necessity for post-mortem examinations, they will be found abundantly in the Registrar-General's Mortality Returns. The number of cases given as "uncertified," or when certified returned in the vaguest possible way, renders these statistics almost valueless for purposes of correct scientific deduction. The diseases named in the tables are but few, and a very large number of cases falls in the Registrar-General's columns under the heading "All other diseases." The readiness with which certificates of the vaguest description are received at registration offices enables many a case to be returned where a post-mortem examination would have thrown quite a different complexion upon it. The late Dr. LANKESTER used to say that he had more than once been called upon to make a judicial inquiry, so that an order might be granted for a post-mortem examination, in a case where no reasonable suspicion or blame could be entertained. As far as possible he endeavoured to

decline such invitations, for he interpreted the function of the coroner to be not simply to inquire into the pathological cause of death, but also into the antecedent and attendant circumstances, and the manner in which the death was brought about—whether by accident or intent. We believe, in point of fact, that there is no enactment directly bearing upon the case of post-mortem examinations for the sake of pathological inquiry, the matter being practically left to the reason and common sense of those most concerned. Unfortunately, the question only arises when emotion has upset reason; and common sense is not a universal attribute even among the educated and enlightened. How much stronger, then, is the opposition likely to be from the ignorant and unlearned, who regard a post-mortem examination with feelings of horror, and are filled with a prejudice against it not unnatural from their limited point of view. We have said that there is no enactment on the question, but most magistrates who have been appealed to before in cases similar to the recent one at Great Ormond-street have based their decisions upon the Anatomy Act, holding that a post-mortem examination for pathological purposes comes under the same category as an anatomical dissection. In an instance known to us, where a public medical officer endeavoured to obtain a magisterial order for a post-mortem examination in a case of great obscurity, reference was made to this Act, and the clauses (7 and 8) bearing upon permission and refusal to make anatomical examinations were pointed out as showing that it was illegal to make such examination if the person had during his life expressed a contrary desire, or if "the surviving husband or wife, or any known relative of the deceased person, shall require the body to be interred without such examination." The magistrate referred the applicant to the coroner (Dr. LANKESTER), who, on learning that no reasonable suspicion attached to the death, declined to issue an order for a post-mortem examination. The case was returned with an open certificate, which was accepted by the registrar! Again, it may be said that public institutions could protect themselves by their by-laws in this matter, and at some hospitals we believe the by-laws are framed to include the understanding that the bodies of all availing themselves of the benefits of the institution are to be examined in case of death. At most hospitals this does not take the shape of any formal agreement, but post-mortem examinations are made within a fixed period of death, unless objections are raised to their performance by relatives of the deceased, whilst at one hospital a considerable check has, we understand, lately been given to pathological research by restricting examinations to those cases only in which the consent has been asked and granted by the relatives. It can hardly be said that this is a satisfactory state of things. It is most expedient, necessary, and useful, that in as many cases of fatal disease as possible the body should be inspected by skilled persons. So true is this, that few educated people will gainsay it, except, perhaps, those who groan under what they are pleased to term a medical tyranny, and who would rather see a nation perish than support measures necessary for the maintenance of public health. Pathological inquiry is something more than investigation into the effects of disease—it is daily leading to a truer view of the underlying causes of disease, and the more facilities that are given for its prosecution, the more will mankind be benefited, and the less will be the risk of the people perishing from lack of knowledge.

THE art of training is an ancient one. In quite early days among the Greeks the process of training for the great athletic festivals was simple. The regimen consisted chiefly of cheese and figs, and the body was hardened by exposure to all sorts of weather, and by frequent plunges into cold water, whilst oil was daily rubbed into it with the view to make the joints supple, and to diminish the tendency to perspiration. This simple and natural system was, however, gradually superseded, first, by the substitution of a meat diet for the cheese and figs, and then by the introduction of elaborate rules for eating, drinking, and exercise. From this period athletic contests, instead of being pursued by all classes of the community as part of their civic life and duty, became more and more the special pursuit of a distinct class. Similarly, when boat-racing was first introduced at the Universities, no special training was required from the members of a crew; indeed, it often happened that the boat was made up only just before the race, and the members were frequently changed during the races. Readers of "Alton Locke" will remember CHARLES KINGSLEY'S famous description of the College boat-races at Cambridge in that novel, the evident laxity, if not entire absence, of any training on the part of the crew being specially mentioned. Gradually, however, the practice of training for the College races was introduced, and many absurd and extreme practices followed, among which may be mentioned that of eating a prodigious quantity of meat at the expense of the other constituents of diet, under the idea that it was more strengthening and nutritious. The quantity of meat consumed under this notion often amounted to three or four pounds, whilst bread and vegetables were curtailed within minute proportions. No wonder that under such a system of diet the majority of the men became "stale," and some decidedly broke down under it. Although this irrational practice is not carried out now to the same extent as formerly, still there can be little doubt that the quantity of food taken is not yet suited to meet the physiological requirements of the body. It cannot be too strongly impressed upon trainers that a healthy young man, engaged in vigorous exercise and properly fed, ought to increase in weight during the period of training. At first a loss may be expected, but that should be more than fully made up as the period of training progressed. But this is seldom the case, and on looking over the weights of the University crews for some years, we find that a loss averaging about six pounds a man is experienced between the time active training is commenced and the day of the race, a period of about six weeks. This loss is more particularly noticed among the heavier members of the crews. The reason of this is to be sought, not so much in the severity of the muscular work, as in the fact that the crews are not properly fed. Indeed, it may be questioned whether the purely muscular exertion required to row the Putney course is more than a vigorous young man should engage in, whilst certainly it is not nearly so severe as it was in the days before the introduction of outriggers and sliding seats, which have both tended to diminish muscular effort and increase the rapidity of the stroke. Now, if we consider the diet upon which this work is under-

taken, we cease to wonder that so many men diminish in weight during training. Taking the ordinary daily diet, even on the more rational system now employed, we find that it is still largely in excess on the nitrogenous side and defective in carbon elements, about 100 grains more nitrogen being taken than is required for the wants of the body, whilst there is a deficiency of nearly 1000 grains in the carbon supplied. Thus we have both a waste and a deficiency. But the waste is not mere waste, since a considerable amount of vital force must be expended in reducing and casting out the surplus nitrogen in the form of urea. Again, as we have already said, the improvements in racing boats have tended to diminish muscular effort and to increase the rapidity of the stroke, thus throwing greater stress on the respiratory powers. This is a fact which is not sufficiently recognised by trainers, who too frequently allow the men under their charge to practise a quick stroke in the light boat before the reciprocal action between the heart and lungs is fully established. The consequence of this error is, we are sure, the contraction of many faults at an early period of training which no amount of subsequent practice can get rid of. In short, the art of training should no longer be empirical, but based upon scientific observation. At both Universities the opportunities for scientific research in this direction abound, and it is to be regretted that more advantage has not been taken of them. When science has rendered training only another word for healthy and vigorous living, the last objection to athleticism will have been removed.

Annotations.

"Ne quid nimis."

THE COMMISSION ON THE MEDICAL ACTS.

WE learn that the Royal Commission on the Medical Acts met on Saturday, April 1st, and again on Monday and Tuesday. Progress, we believe, was made; but the whole of the report is not yet agreed to. The Commission will not meet again till May 5th, when, we may hope, the report will be concluded. There are only two consolations under these delays: the first is that there is always a chance of delay meaning thoroughness; and, secondly, that were the report now ready, there would be no probability of action upon it by the Government in the present session, owing to the well-nigh utter stagnation of legislative work.

COFFEE.

WE make no apology for once more calling the attention of our readers to the importance of ensuring that coffee supplied to the public shall be genuine, and we are pleased to find that this matter is attracting the attention of members of the House of Commons, and that Sir E. Lechmere on Monday night, in putting a question as to the Treasury Minute of Jan. 20th, and the encouragement held out thereby to professional adulterators of coffee, put the saddle on the right horse, and directed his inquiry to the Right Hon. Joseph Chamberlain. In the very able speech which the President of the Board of Trade made in the late debate on Free Trade he stated that whereas the consumption of articles of luxury, and notably tea and cocoa, had steadily increased, the consumption of coffee had undergone a decrease. The right hon. gentleman, with a surprising *naïveté*, stated that he was unable to account for this—"possibly the public taste had changed." Now, one cannot possibly believe that the taste for what passes for coffee has decreased. The preachings of the temperance party and the fact that "coffee palaces" have been established by thousands throughout the country point in another direction, and the success of private traders and public companies in palming off mixtures makes it very certain that the consumption of drinks which are flattered by the name of coffee has undergone an enormous increase. If Mr. Chamberlain wishes to know why the consumption of coffee has decreased, we must refer him to our annotation of March 25th, by which he will find that out of thirty-seven samples of coffee bought in London during the month of February, 1882, only two were genuine, and that not a few contained as little as 10 per cent. of true coffee. It is idle to contend, as Mr. Chamberlain did in his answer to Sir E. Lechmere, that the recent Treasury minute does not tend to increase the practice of adulteration; for facts are strikingly against him; and if this obnoxious minute be not cancelled, Mr. Chamberlain must rest under the imputation of giving the assistance of the Board of Trade to unprincipled traders. Why should the importation of mixtures of coffee with chicory, "and any other vegetable matter," be encouraged, and of what use is it to the public? Surely those who prefer their coffee mixed can mix it for themselves. In these days of "bold advertisement" every tradesman ought to be compelled not only to sell mixtures as such, but to give on each packet an exact statement of the nature of the mixture and its percentage composition. When this is done there will, perhaps, be an end of the outrageous cheating which takes place in connexion not only with coffee, but with hundreds of "patent" foods bearing incomprehensible names. Coffee may be looked upon as a home product, being largely produced in the British Empire, and, although we do not ask for "protection" for our countrymen from any legitimate competition, we think they have a right to demand that the Government shall at least ensure that those who import roasted vegetable refuse and sell it as coffee shall at least be made to pay dearly for the privileges which the Board of Trade allows to them. Coffee unroasted and raw pays a duty of 2*d.* per lb. If imported mixtures were saddled with a duty of sixpence, the importation of chicory and other (valuable?) vegetable matters unmixed would not be hindered, the British public would be able to get these mixtures more cheaply than at present (because the profit of the dishonest trader would be lessened), and a genuine and proper protection would be afforded to our countrymen who have invested their capital in coffee plantations. Coffee is a stimulant and possesses stimulating properties which chicory and roasted cabbage stumps do not, and we feel sure that until the working man is made to understand the stimulating value of coffee, and is enabled to feel that a jaded nervous system is more benefited by an infusion of the coffee berry than by a glass of gin, the temperance movement will take no firm hold of the population. Those who seek for stimulation from coffee should buy it raw and roast it and grind it for themselves.

THE KOLA OR GOUROU NUT.

THESE seeds, called also Ombémé nuts, are the produce of Sterculia acuminata, belonging to the natural order Sterculiaceæ, and are known to us by the accounts of West African travellers, who state that when chewed or sucked, they possess the power of rendering the flavour of water, even if half putrid, agreeable, and they were believed to contain caffein. They have recently been made the subject of analysis by MM. Ed. Heckel and Fr. Schlagdenhauffen, who have found that they do actually contain more caffein than the best samples of coffee that could be procured, and that this base is altogether free and uncombined—not there-

fore, as in the coffee berry, united with an organic base; secondly, that they contain a very appreciable quantity of theobromine, which assists the action of caffein, and possesses similar properties to that base; thirdly, which is an important fact, that they contain a considerable quantity of glycose, of which cacao presents no trace; fourthly, that the quantity of starch present is three times greater than that contained in theobroma, which explains its nutritive value; fifthly, that there is but little fat, in which respect it differs notably from cacao; and, lastly, that they contain a special form of tannin, which approximates caffeo-tannic acid in its composition, and a red colouring matter, very similar to that named by Payen cacao-red. The physiological examination of this substance has shown that its properties are essentially due to the caffein and theobromin it contains. The seeds, it appears, have long been in use in Soudan and Western Africa, for the relief or cure of diseases of the intestine and liver, and especially in cases of atony of the digestive tract, and also as a masticatory and tonic, like the areca-nuts, which are held in such high esteem by the natives of India. Medically they may come to occupy a prominent place by the side of coca and other anti-metabolic remedies, to which they would probably prove superior in consequence of the tannin they contain.

A CONTORTIONIST.

MR. CHARLES H. WARREN, an American acrobat and contortionist of some fame in his own country, is at the present time in London, exhibiting his remarkable power of dislocating many of his joints by voluntary muscular action. He is the child of healthy parents, and the first indication of any abnormality was that he was frequently tripped up by some displacement of the hip-joint, when quite a young child; the fall, however, served to replace the bone. After two or three years he grew out of this tendency. At eight years of age he began to train as an acrobat. He does not make use of his power of dislocation to aid him in his performances, nor does dislocation now ever occur involuntarily. He is the father of two children, a son and a daughter, both of whom showed the same peculiarity, so far as the hip-joint is concerned. He is a tall, well-developed, finely proportioned man. His muscular development is uniform and great. By voluntary muscular contraction he dislocates forwards either or both condyles of the lower jaw, downwards (partially) the head of each humerus, forwards or backwards (partially) each carpus, upwards and backwards (completely) the head of each femur, and backwards and forwards (partially) each of the phalanges of the fingers and thumb. With the aid of his hand he partially dislocates to either side the carpus, and forwards and outwards the ankle-joint; when the knee is flexed he can rotate the tibia very freely, and make the inner condyle project an inch in front of the femur. Each of these displacements is accompanied by a distinct snap, but the replacement of the bones is noiseless and without effort. The most remarkable, as also the only complete, of these dislocations is that of the hip. He stands at ease with the toes turned further out than is usual, and has unusual freedom of eversion of the lower limbs. When the femur is displaced, the great trochanter is raised and drawn back on the pelvis, and is still very prominent; the limb is shortened and inverted, and knee- and hip-joints are flexed; the head of the bone cannot be felt. The explanation of these facts is that the man's ligaments are unusually lax, while his muscular power is very great, and probably also the rim of the acetabulum is less prominent than usual. In addition, Mr. Warren shows other illustrations of his remarkable power over his muscles, which are of fully as much interest as the foregoing. Thus he can contract at will the two pillars of the fauces, the platysma myoides, and the pectoralis minor, and can fix the elbow-joints by strong contraction of either the arm or forearm muscles, or of both simultaneously. He voluntarily produces the deformity of talipes equinus and talipes equino-varus. Equally interesting is his control over the muscles of the trunk. Thus he can contract his recti abdominis in a wave-like manner, and illustrate capitally the formation of phantom tumours. He can contract his abdominal muscles quite back on the spine, so that the abdominal aorta is seen, as well as easily felt, pulsating. He also expands his chest to an enormous size, and can contract it so completely that the front becomes quite concave. These are merely examples of muscles unusually developed, and brought under the influence of the will to a most remarkable extent; they do not betoken any congenital peculiarity.

SICK QUARTERS AT YOKOHAMA.

THE *United Service Gazette* states "that the naval surgeon at Yokohama has been disestablished by Vice-Admiral Willes, the commander-in-chief" on the China station. The navy estimates for the year provide for a staff-surgeon and a surgeon on the salaried establishment of the Yokohama Hospital; but it appears that the commander-in-chief on the station has decided to remove the surgeon and to send up one from Hong Kong during the summer months for duty at Yokohama. This will involve the removal of a medical officer from Hong Kong at the time when it is most unhealthy and his services are most likely to be required. This was considered a point of so much importance by the late commander-in-chief that he would not grant leave of absence to any medical officer during that period of the year. It is supposed that Admiral Willes adopted this new regulation from motives of economy; but if this saving of money is made at the expense of the health and comfort of the sick, or of the medical officers, it will prove a very mistaken parsimony. It appears to us remarkable that a step of this nature should be taken apparently without any sanction from home, if we may judge by the provision made in the estimates for the service at Yokohama. If it has been so done, we trust the Director-General of the Medical Department will bring the matter under the review of the Lords of the Admiralty, for such a change implies a serious interference with the arrangements for the efficient service of the branch for which he is responsible. We feel satisfied that Lord Northbrook would not sanction, for the mere saving of a paltry sum of money, any such arrangemen as would involve the risk of inadequate professional assistance to the sick and wounded sent to Yokohama for change or for treatment. Admiral Willes appears to have taken upon himself a serious responsibility if he has, as our contemporary would seem to imply, made this alteration in the arrangements sanctioned by the Lords of the Admiralty on his own authority and without reference to the Board.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

LAST week the vacancy on the Council occasioned by the resignation of Mr. Swanzy was filled up by the unanimous election of Mr. Wharton, ex-President of the College, and Surgeon to the Meath Hospital. The election for an Examiner in Ophthalmic Surgery—the first of the kind—took place on Monday, the 3rd inst., when, of the three candidates, Mr. Swanzy was chosen. This result was generally expected; and a vacancy for a Professor of Ophthalmic Surgery in the Medical School of the College must necessarily take place, as Mr. Swanzy cannot hold both appointments. The emoluments of the examinership, it is stated, will average from twenty to twenty-five guineas per annum.

THE REWARDS OF PROFESSIONAL LABOUR.

WE have recently allotted special space to the notification of wills left by medical men. It must have already struck those of our readers who have glanced at the figures recorded in this weekly report, that the average value of the property handed down by members of the profession to their families is singularly small. This is, unhappily, the fact. The general practitioner is a hard-working, and too often a struggling man to the end of his days. Comparatively few of the class are able to retire, as the members of other callings retire for rest from their labours, before the relief which death brings to all men. Physicians and surgeons as a rule die in harness. The expenses incurred by those who make specialties of medicine or surgery, or of any one branch of either of these departments of professional work, are necessarily great, while the recompense to the life of labour entailed, looking at the career as a whole, is proportionately small. Even the few who seem to make large incomes during a part of their career seldom amass even moderate competencies. Some five-and-twenty years ago, calculations were made for London and the provinces, and it was estimated that a physician, practising as such in London, did not acquire an income on which he would be required to pay income-tax for sixteen years from the commencement, while a physician in the provinces reached the legal figure in eleven years, but not earlier. The differences in favour of the provinces are, of course, due to the fact that no man would think of commencing practice as a pure physician in any city or town, except the capital, unless he had special reason to believe there existed an "opening." We have no means of knowing whether matters have mended with the profession generally during the last quarter of a century, but, looking to the increase of its aggregate numbers in relation to the population, we fear there is not much ground to hope that the rewards of professional labour have been sensibly augmented. The labourer is worthy of his hire, and it is well now and again to look into this matter of money. It will sooner or later be necessary to take it into very serious consideration in relation to the question of fees. Meanwhile, the lesson to be learnt from the story of the wills left by medical men is certainly one of caution and thrift. It is a sad reflection that, speaking generally, the families of medical practitioners are insufficiently provided for, a large proportion being left almost in poverty.

THE MECHANISM OF DEATH FROM CHLOROFORM.

A DISCUSSION is now proceeding at the Paris Académie de Médecine on the dangers of chloroform, and the most noteworthy contribution which it has elicited is a statement by M. Vulpian of certain teachings of experiment on the subject. The lessons are by no means reassuring to those who look on chloroform with grave suspicion. The danger of death is shown by experiment to be present at the commencement, during the course, or at the end of the chloroformisation, and even sometimes for some hours or days subsequently. The occasional cases of death immediately after the commencement of inhalation receive their explanation from experiment. In healthy animals respiration may be at once arrested by pinching the superior laryngeal nerves, and even by a strong sensory impression. Thus, if chloroform is merely applied to the nostrils of an animal, respiration is sometimes arrested. The medulla oblongata has been thought unaffected by the inhalation of chloroform; but, although resisting the influence of chloroform longer than other parts of the nervous system, it is unquestionably affected, in some degree, even in moderate anæsthesia. If the pneumogastric nerves are divided in a healthy animal, it continues to breathe. Stimulation of the central ends then arrests respiration, which recommences, even though the peripheral extremities are faradised. But if the same experiment is performed on an animal under the influence of chloral or of chloroform, the breathing does not recommence after it has been arrested by stimulation of the divided pneumogastrics. This shows that in the anæsthetic state the medulla oblongata is in a functional condition different from its normal state. Again, in an animal under normal conditions, faradisation of the peripheral ends of the divided pneumogastrics arrests the heart in diastole; but if the stimulation is continued, the contractions recommence. If the same experiment is performed on an animal under the influence of chloroform, the arrest of the heart is more readily produced, and is final. Hence chloroform acts on the respiratory centres; but it acts also upon the motor ganglia of the heart. In animals the cardiac failure is much more grave than the respiratory failure; life cannot be saved in more than one in forty of the former, although in the more frequent cases of respiratory failure life can often be preserved by artificial respiration. M. Vulpian fully confirms the slighter degree of danger involved in the use of ether, in consequence of which he invariably prefers it as a means of obtaining anæsthesia in experiments on animals.

THE PARIS MORGUE.

DR. GAVINZEL has published, in the form of a pamphlet, some interesting remarks upon the mortuary known in Paris as the "Morgue." Up to the time of the first Revolution the Paris mortuary was at the Chatelet prison, but after the demolition of this prison a prim little building in the Greek style was erected on the Quai St. Michel, and was only replaced twenty years ago by the new mortuary close to Notre Dame Cathedral. This, it would appear, is rapidly becoming too small for the requirements of the city; for Dr. Gavinzel says that while in former times the number of bodies brought there during a period of ten years was not upon the average more than 300, it is now about 675. M. Brouardel, the principal inspector of the Morgue, has visited the principal establishments in France and abroad to which dead bodies are brought for post-mortem examination, and the result of his inquiries is embodied in the following suggestions for the improvement of the medical service at the Paris mortuary:—1st, the means for really preserving the bodies brought there; 2nd, an enlargement of the room in which the autopsy is made; 3rd, the opening of a microscopic room; 4th, the creation of a chemical room; 5th, the opening of a room for physiological experiments; 6th, a room for the anatomical preparations which it is wished to preserve, and for the plaster casts; 7th, a collection of anatomical pieces, poisons, and specialist publications; 8th, an ample theatre for lectures, with a private room for the lecturer. Dr. Gavinzel suggests that the bodies should be preserved by the use of a Carré freezing-machine, in which, as our readers are aware, there is a current in which the ammoniacal gas is successively liquefied, evaporated, and redissolved by the water, while the heat brought out during the liquefaction and dissolution of the gas is absorbed by a stream of water. One of these machines of only one-sixth of a horse-power makes a hundredweight of ice in an hour.

SMALL-POX IN HAYTI.

AN extract from a private letter of the late British Vice-Consul at Port-au-Prince, published in *The Times*, gives a terrible picture of the recent ravages of small-pox in the island of Hayti among a population of less than a million people. It appears that the disease carried off at least 5000 persons within about three months of its prevalence, and it is calculated that not less than 20,000 persons have perished from it.

LEAD POISONING IN FACTORIES.

PUBLIC attention has at length been aroused to the fact, well known to the profession, that the provisions of the Factory Laws with respect to workers in lead are either inadequate to prevent cases of poisoning by the metal, or are disregarded by factory owners and their *employées*. On Saturday last an inquest was held at Shoreditch on a young woman, twenty-seven years of age, who succumbed to lead poisoning after but ten months' exposure to the deleterious substance in the factory in which she worked. Dr. Forbes of the Shoreditch Infirmary stated during the inquiry that he had admitted into that institution sixteen cases of lead poisoning in a few months, and in one case a girl had been employed at the work for two weeks only, and absorbed so much poison that she lay between life and death for six months. We believe that there are in existence very stringent regulations as to workers in lead; but these cases, and the numberless instances of lead paralysis arising in consequence of exposure to the powder-dust in white-lead factories especially, that come under the notice of physicians to hospital out-patient departments, afford evidence of culpable laxity somewhere. We are glad to see that Mr. Broadhurst has brought the subject under the notice of the Home Secretary, and we may hope to learn that, without delay, a Government inquiry by the medical officer of the Local Government Board will be instituted into the precautions taken at these factories to prevent the dissemination of the deadly dust.

ACONITIN.

THE recent occurrence of cases of poisoning from aconitin has led to considerable attention being paid, on the Continent as well as in this country, to the potency and physiological action of the several commercial varieties of aconitin, and in particular to an important series of experiments by Professor Plugge, of Groningen in the Netherlands, the results of which have been published in the last number of Virchow's *Archiv*. A collateral point investigated is whether the alleged paralysing influence of aconitin on the motor nerves is really exerted, and, if so, whether it occurs equally with all varieties of aconitin. The specimens experimented with consisted of nitrate of aconitin obtained from Petit, in the form of hard, white crystals; from Morson, as a yellowish-brown powder ("pseudaconitin"); from Hottot, as a white powder; from Hopkin and Williams, a confluent, translucent, gum-like mass, of greenish-brown colour (? pseudaconitin); from Merck, as a yellowish powder; from Schuchart, as a white powder; and from Friedländer, of Trommsdorf, as a confluent greyish-white mass. These commercial preparations were used in the form of an aqueous solution of the strength of ½ or 1 per cent. They were found to vary much in potency—that of Petit being the strongest, that of Friedländer the weakest, and that of Morson intermediate between the two. It was further found that the intra-muscular motor nerve endings were constantly paralysed—the paralysis being, however, incomplete when small doses were employed. The experiments were made on frogs, and the same influence on the motor nerves was found whichever variety of frog was employed. The action of aconitin and pseudaconitin in this respect resembles that of curara. The nerve trunk is not paralysed. The sensory nerves are affected only in the slightest degree, or not at all. Boehm and Wartmann came to the conclusion that the paralysing effect is produced through the nerve centres, but this Plugge considers to be unproved, and it is in a very high degree probable that all the paralysis caused by aconitin is due to its effect on the motor nerve endings. The muscles themselves preserve their irritability even after doses of aconitin which are from five to ten times as great as are necessary to destroy the irritability of the intra-muscular nerve-endings. He fails to confirm the resemblance, asserted by Weyland, between the action of aconitin and veratrin. Amongst other points noted in the symptoms of aconitin poisoning are that fibrillary muscular contractions were seldom observed, and certainly in the frog constitute no constant symptom. Dilatation of the pupil is frequent, but not invariable. In most cases there was a secretion of mucus from the skin, but the dose required to produce this symptom varied with the different preparations. The respiration invariably became laboured, and ceased after a few minutes. Vomiting movements were almost constant, but were produced in different degree by the different preparations. The blood was invariably of a dark violet-red colour, so that the distended veins appeared to be black. In this, however, an exception was presented by the preparations of Friedländer and Schuchart, which caused very little change in the colour of the blood. The heart was constantly arrested in diastole, and was distended with dark blood. The auricles contracted longer than the ventricles. The poisoned heart, while still pulsating, could not be arrested, either by electrical stimulation of the vagus or by irritation of the sinus, nor, once arrested, could any further contraction be excited in it.

DR. JOHN S. BILLINGS ON MEDICAL ETHICS.

THE author of the inimitable address on "Our Medical Literature" at the International Medical Congress has recently given a valedictory address to the new graduates of Bellevue Medical College. It contains some excellent advice, and is marked throughout by "wit, the child of wisdom." Referring to the resolution of the College of Physicians on homœopathy with evident approval, he adds: "Let us take a concrete example. You treat a case of pemphigus with arsenic. You may theorise as you like about the essential nature of pemphigus; you may select arsenic because you think it would produce the disease, or because you think it produces something contrary to the disease, or for no reason whatever beyond the empirical fact that you have seen a case of pemphigus recover under the use of arsenic. Also, you may give this arsenic alone, or combined with other substances, and in any doses that you please, from the decillionth of a grain to a grain; and you may explain the results as you like. But as an educated physician and a gentleman, you may not advertise yourself as an arsenio-pemphigist, and denounce everyone who does not adopt your theory and practice; and as there is a good deal of common-sense truth in the old adage that a man may be known by the company he keeps, you will not have more to do than you can help with the men who do so advertise themselves; and still less will you have to do with those who advertise themselves as anti-arsenio-pemphigists, and then treat their cases with arsenic after all, and claim the results as due to dynamised brickdust."

FAT AND AGE.

THE influence of age on the chemistry of the body is a department of physiology as yet very imperfectly investigated. The composition of the fat, however, at different periods of life, is obviously one of the simplest problems connected with the question, and it has been lately investigated by Lanquer. In newly born children the fat has a particularly firm consistence, constituting a peculiar tallow-like mass, with a melting point of 45° C. The fat of adults, however, separates, at the ordinary temperature of a room, into two layers. The upper layer is completely fluid, translucent, and of a yellowish colour, and only solidifies at temperatures under zero Centigrade. The lower layer is a crystalline mass, which has its melting point at 36° C. Further investigations were made on about a kilogramme of each kind of fat. The fatty acids obtained from the fat

of newly born children (after precipitation with hydrochloric acid) were found to melt at 51° C., and those obtained from the fat of adults had a melting point of 38° C. The former was found to contain three times as much palmitic and stearic acid as the latter. The palmitic acid preponderated over the stearic in each kind of fat, but much more in that of children than of adults, the proportion being in the former four to one, but in the latter nine to one. There are 86 per cent. of oleic acid, 8 per cent. of palmitic acid, and 2 per cent. of stearic acid in the fat of an adult; whereas in the child the proportion of oleic acid is only 65 per cent., the palmitic acid 28 per cent., and the stearic acid 3 per cent.

PAYING MEDICAL BILLS OUT OF AN ESTATE.

A VERY singular action in the Edmonton county court is reported in the *Weekly Herald*. The plaintiffs, Messrs. Hall and Plaister, sought to recover the sum of £15 2*s.* from the defendant, Mr. George Henry Jackson, surgeon, of Lansdowne House, Tottenham, sole executor and residuary legatee of the late Mrs. Seaman, of Northumberland-park, Tottenham. It was not, however, the action that was singular, but the fact that it should have been necessary. The defendant objected to pay the account on the ground that the greater part of it was for attendance on the late Mr. Seaman, and chargeable therefore to his estate, and that Mrs. Seaman was not liable. On the other hand, Mr. Hall, well known by forty-seven years' arduous and honourable practice about Tottenham, testified that Mrs. Seaman had said, "Give the old fellow all the attendance you can, and I will pay you." Mr. Fitch, on behalf of Mr. Jackson, argued that before a wife could be held liable for payment for attendance on her husband there must be a written engagement to pay. Fortunately, his Honour did not see the matter in this light, and gave a verdict for Messrs. Hall and Plaister, though he allowed the defendant fourteen days to appeal. We regret that a medical executor should set an example of refusing to pay medical bills that have such a claim in reason.

THE LONDON WATER-SUPPLY.

COL. BOLTON, R.E., the water examiner, reports of the London water-supply in February that the water derived from the Thames was good in quality during the early part of the month; on the 16th it became bad; on the 19th very bad, in which condition it remained until the 23rd, when it slightly improved, becoming again bad on the 27th and 28th. The water in the river Lea was in bad condition throughout the month. This was before filtration. After filtration the water was delivered both from the Lea and the Thames in "a clear and well-filtered" state. Messrs. Crookes, Odling, and Meymott Tidy report of the water for February that "it is observable that the steady improvement in the colour of the waters, and in their freedom from organic matter, to which we called attention in our last report, has been continued during the present month. This year, more early than usual, the waters have ceased to manifest the features characteristic of the winter season."

REMOVAL OF THE ENTIRE UTERUS.

AT the North Staffordshire Infirmary, on March 30th, Mr. Dunnett Spanton removed from a patient, under ether, the entire uterus, with the left ovary (of the size of a small orange) and the Fallopian tube on the left side, the right ovary being allowed to remain. The operation was necessitated by the existence of cancer, and was accomplished without unusual difficulty, the amount of blood lost being less than two ounces. The patient, who has not been troubled by sickness, has so far progressed quite satisfactorily.

THE BLOOD OF ANIMALS LIVING AT HIGH ALTITUDES.

THE difficulty of respiration which affects animals, as well as man, suddenly removed from plain or champaign country to lofty mountain regions is well known, whilst after residence in such regions for some time the system seems to accommodate itself to the new conditions, and exercise can be undertaken and efforts made which at first were impossible. The recent observations of M. P. Bert afford to some extent an explanation of this, for he has shown that the blood of the natives of elevated regions, and the blood of animals acclimatised to such regions of low barometric pressure, are characterised by having an unusually great capacity of absorption for oxygen, much greater than the blood of animals living at the level of the sea, and this is due to the greater richness of their blood in hæmoglobin. They have therefore a greater area for the storage of oxygen, which may be drawn upon for the usual metabolic changes of the body, and for that extra call for oxygen which is involved in the performance of violent muscular efforts. To invalidate this conclusion it must be shown that animals inhabiting mountain ranges possess a smaller absolute quantity of blood, which has not been noticed by any observer.

NOTIFICATION OF INFECTIOUS DISEASES.

A METROPOLITAN Vestry is reported to have presented a petition to Parliament approving of the principle of notification of infectious diseases, but disapproving of the fee proposed to be given to the medical man for his certificate. From two shillings and sixpence they would reduce the fee to sixpence. The *Local Government Chronicle* pertinently remarks: "If the certificate is worth only sixpence, is it worth while to require it to be made at all?" Mr. Thomas Clark, the Chairman of the Edinburgh Health Committee, writing to *The Times*, reports the successful working of the Act which provides for the notification of infectious disease in that city. Before it was passed the Royal Colleges of Physicians and Surgeons of Edinburgh had determined to oppose it, but inadvertently, it would appear, no opposition was offered. The Act passed, its provisions were loyally accepted by the medical profession in Edinburgh, the theoretical objections urged at first against it have, Mr. Clark says, "proved to be purely imaginary," equally so far as the public and the Corporation are concerned, and it has been a genuine success. Since the Act came into operation in 1879, 11,650 notifications have been made to the Health Authority, and the amount paid to the profession has been £1460. So far Mr. Clark's story.

THE LIVERPOOL MATERNITY HOSPITAL.

A LIVELY controversy is raging in Liverpool as to the question of closing the Lying-in Hospital and converting it into a hospital for the treatment of diseases of women. The committee of the institution in their annual report recommended the abolition of the indoor treatment of maternity cases. This recommendation was not accepted; but delegates were appointed to confer with the committee. This conference did not result in converting the committee, and, as the subscribers of the charity at a recent meeting were still resolved to carry it on chiefly as a maternity hospital, the committee resigned. It remains to be seen what will be done. The president of the committee expressed, no doubt, a strong and general conviction against lying-in hospitals. He said Birmingham had abolished its lying-in hospital, and that neither Manchester, Sheffield, Leeds, Wolverhampton, nor Bolton had such a hospital. A manifesto, signed by about fifty physicians and surgeons in Liverpool and the neighbourhood, entirely supports the view of the committee.

QUALIFIED AND UNQUALIFIED HOUSE-SURGEONS.

AT a special meeting of the governors of the Royal South Hants Infirmary, held last month, it was decided to appoint an assistant house-surgeon, and a discussion arose as to the necessity for this gentleman to be qualified. It was represented that many senior students would value such a post very highly, and that it would be useful in preparing them for their qualifying examination; while one of the staff, Dr. Trend, contended strongly that such an appointment should only be held by a qualified surgeon. From the scanty facts before us we cannot speak definitely as to this particular appointment, but there is a principle which should guide all such decisions that may be applied to this case. If this officer be really and truly an assistant to the qualified house-surgeon, and only act under his orders and be always covered by his authority, then he need not be qualified. If, on the other hand, he be in any way independent, acting on his own responsibility, in sole charge of patients, he certainly ought to be qualified. The question hinges upon the responsibility of the officer, and only where there is no personal professional responsibility ought a qualification to be dispensed with.

THE LATE SIR E. B. SINCLAIR.

AT a meeting of the College of Physicians, held recently, the following resolution was unanimously adopted:—"That the President and Fellows of the King and Queen's College of Physicians in Ireland desire to place on record their sense of the great loss which the College and the medical profession have sustained by the death of Sir Edward Burrowes Sinclair, King's Professor of Midwifery in the School of Physic; and hereby offer to Lady Sinclair and the other members of the late professor's family their respectful and heartfelt sympathy in the irreparable loss they have sustained by his premature death, at a time when he seemed likely to add largely to the great benefits he had already conferred upon the medical profession and charitable institutions of Dublin connected with the branch of medicine which he had made his special study."

COMPARATIVE DENTAL SURGERY.

THE daily papers, during the past week, have contained a somewhat sensational account of the extraction of a molar tooth from the mouth of a baboon in the Zoological Gardens, and the chief difficulty would seem to have been in the administration of the chloroform. The animal is stated to have licked, before inhaling, the anæsthetic; and this obviously recalls the idea that, in any future operation of this kind, the chamber suggested by M. Paul Bert could be improvised very readily out of an ordinary cage, and then its atmosphere be charged with the chloroform, if necessary under pressure, by means of bellows and spray. It is interesting to notice the presence of distinct caries in the teeth of the higher apes when in confinement: a sure sign that a civilised life suits them no better than it does the human species.

ACUTE ALVEOLAR PERIOSTITIS.

IT is as interesting to surgeons in general as it is instructive to dental surgeons in particular, to notice the active treatment of the above very common malady. To take a typical case: a young lady of prepossessing appearance, moving in good society, has, after an attack of pain, a sudden swelling in the region of the lower bicuspid teeth, very disfiguring by its bulk, and suspiciously red on the cutaneous surface. Her anxious mother at once sends for a surgeon, perhaps a specialist in oral surgery, who examines the case, and very properly refers it to the family dentist, advising, however, instant extraction of the offending tooth, but not attempting to open the abscess, though he takes care to say that unless the tooth is removed the abscess may even open spontaneously on the skin, and cause an ugly scar. All this, no doubt, is correct theoretically, but practically the surgeon would help affairs very much if he would at once open the abscess internally, and in nine cases out of ten the tooth can afterwards be saved; as the dental surgeon well knows that no cases of teeth with dead nerves are so easily or so successfully treated as those in which a free discharge of the suppurating contents has been established on the gum surface.

A PHYSIOLOGICAL VIEW OF OBSTRUCTION.

THERE is no other assembly of business men who would tolerate the existing rules of debate in the House of Commons. There is a limit to human strength and patience. This limit is very soon reached at the fag end of the day, either after dinner or before, especially under prosy speaking and reiterated and exhausted arguments. It is unreasonable that earnest men in politics should be expected to work under conditions which men would not tolerate in any other kind of work. Apart from all political considerations, it seems most urgent that Parliamentary leaders of both sides should combine to save time and strength. It would be very interesting to use the sphygmograph on members after an all night's sitting, or even after an ordinary night of the existing system, not for doing business, but for *not* doing it.

THE METROPOLITAN ASYLUMS BOARD FLOATING HOSPITALS.

THE Thames Conservancy have requested the Asylums Board to remove the small-pox hospital-ships *Atlas* and *Endymion* from their berths near Greenwich to berths in Long Reach. The Local Government Board approves of the change, provided the ships are reserved for convalescent cases, Homerton Hospital being re-opened for acute cases. The question has been referred to a joint committee of all the small-pox hospitals committees, and Sir E. Currie suggests that the question should not be dealt with until the Report of the Royal Commission on Infectious Hospitals in the metropolis has been presented.

THE ASSOCIATION OF LOCAL BOARDS AND SANITARY AUTHORITIES.

THE first annual meeting of this Association was held in Manchester on the 16th ult., Dr. Hewitt, chairman of the Bury Board of Guardians, presiding. It was announced that fifty local authorities had joined the Association. The meeting gave promise of good results from this Association in the future. Papers were read on the "Purification of Sewage," with relation to the Irwell and Roach, by Mr. James Farrar, of Bury; the "Sanitary Work of Local Boards," by Mr. Mullinor, surveyor, Manchester; and the President opened a discussion on the provisions of the Rivers Conservancy and Prevention of Floods Bill.

AT a recent inquest held in a room at the Charing-cross Hotel, the coroner, Mr. St. Clair Bedford, complained of the great disadvantage under which inquiries into the cause of death were conducted in the parish of St. Martin's-in-the-Fields. The guardians would not allow him the use of the Vestry-hall when the body on which the inquest was being held actually lay in the mortuary under the church. But for the courtesy of the manager of the hotel, he would have been compelled to hold his court in a public-house, a proceeding to which he had a very strong objection.

THE appointment to the Professorship of Midwifery at the Medical School of Trinity College, Dublin, vacant by the lamented death of Sir Edward Burrowes Sinclair, is in the hands of the Fellows of the College of Physicians in Ireland, who will select his successor. There are three candidates for the post, which will probably be bestowed upon Mr. J. Rutherford Kirkpatrick, a graduate in medicine of the University of Dublin, Fellow of the College of Physicians, ex-Examiner in Midwifery in the Royal College of Surgeons, and ex-Assistant-Physician to the Rotunda Lying-in Hospital.

MR. RAFFLES, the stipendiary magistrate of Liverpool, has committed Etheno de Tomanzie, a coloured gentleman, on a charge under the Births and Deaths Registration Act, 1874, for using false certificates of death while not possessing the legal right to do so. Tomanzie was fined £5 for unlawfully using a medical title. He described himself as a Licentiate of Medicine of British India. A similar case against "John Adams," who produced an American diploma, and said that he had obtained it after examination conducted through the post, was adjourned *sine die*.

THE appointment of David J. Hamilton, M.B., F.R.C.S. Edin., to the Chair of Pathology recently founded by Sir Erasmus Wilson in the University of Aberdeen, has received the approval of the Queen.

DR. HADDEN, Demonstrator of Morbid Anatomy at St. Thomas's Hospital, has recently been made a corresponding Member of the Société Anatomique de Paris, at the nomination of Professor Charcot, the president.

HER MAJESTY has approved of the appointment of Surgeon-General Crawford, to be Director-General of the Army Medical Department.

THE Senatus Academicus of the University of Edinburgh have resolved to offer their honorary degree of LL.D. to Mr. John Simon, F.R.S., and Dr. Angus Smith, F.R.S.

AT the request of the President of the United States, conveyed through Mr. Lowell, the Home Secretary has ordered a respite of the execution of Mr. Lamson until April 18th.

SIR ERASMUS WILSON, President of the Royal College of Surgeons, is, we regret to hear, seriously indisposed.

Public Health and Poor Law.

LOCAL GOVERNMENT DEPARTMENT.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Hastings (*Urban*).—Mr. Charles Knox Shaw reports for 1881 a total death-rate of 15·64 per 1000 population (42,258, 1881), and less the deaths of visitors a death-rate as low as 14·00 per 1000. The birth-rate was 29·29 per 1000 population, "the highest birth-rate recorded during the last seven years," but considerably below the rate of the metropolis and nineteen English towns. Of the principal zymotic diseases, scarlet fever of a mild and non-fatal character was rather prevalent towards the close of the year, and several cases of small-pox were introduced into the borough, but prompt isolation of several cases in the sanatorium "prevented any further spread of the disease." The sanatorium, indeed, fully proved its value in a health-resort like that of Hastings. Eighty-four cases of infectious, or supposed infectious, diseases were admitted to it during the year, seventy-seven suffering from scarlet fever, four from small-pox, and three cases affected with suspicious ailments. Eighty-three of these cases recovered and one only died, an unvaccinated infant, which succumbed to small-pox. Many families willingly and gladly availed themselves, Mr. Shaw states, of the advantages afforded by the institution. Six deaths from enteric fever are recorded, and twenty cases were reported. Several of these cases were imported, but "in most instances the disease was caused by sanitary defects allowing pollution of the air or water. ..... The most frequent sanitary defect giving rise to water pollution, and thereby endangering life, is a water communication between the drinking cistern and the soil-pipe, caused by the overflow pipe of the cistern running either direct into the soil-pipe or else into the D-trap." An important addition to the water-supply of the borough is promised, "a good and abundant supply of pure water" having been found in an experimental boring at Filsham, undertaken on the recommendation of Mr. Topley. We may add that it is proposed to increase the accommodation of the sanatorium by building a detached portion for the use of small-pox cases.

Chesterfield (*Rural*).—Dr. Angus Mackintosh reports for this district during 1881 a death-rate of 15·5 per 1000 of the population as compared with 21·1 per 1000, the average annual death-rate of the eight previous years. He states also that the infant mortality for the year "was considerably below that of the two previous years"; and adds "this points to better management on the part of the parents and improved sanitary conditions generally." The birth-rate of the district was 39 per 1000 of the population. Writing of zymotic diseases, Dr. Mackintosh observes that the "district has not been free from scarlatina since he came to it nine years ago, and while no proper provision is made for isolation there is very little hope of seeing the time when it may be said to be stamped out; under present arrangements it moves about with the visitation and migration of the population, in spite of everything that can be said or done." Of the dwelling-house accommodation in his district he writes: "The dwelling-houses constructed in the district many years ago are generally wanting in the necessary requirements as to internal space, dryness of site, and proper construction of walls with respect to dampness. The floors of them, too, are often found saturated with moisture from the underlying ground, showing the want of subsoil drainage. Those of more recent construction, especially those built by colliery owners, are in all sanitary aspects much superior to the old. The means of ventilation, however, are often deficient in both. Colliers and labourers have generally large families; the bedrooms are frequently small, too few, and sometimes without a fireplace to aid ventilation. Windows may be found on one side only, where cross ventilation cannot be secured. I do not wish to convey the idea that dwelling-houses in the occupation of colliers, labourers, and working men in the district are inferior to those of other similar districts throughout the kingdom, that would be too sweeping a conclusion. What I mean is that they are defective in some respects everywhere." Dr. Mackintosh reports the drainage of his district as completed, except in a "very few outlying villages," and giving general satisfaction. The sewers' ventilators, moreover, are kept well open, and house connexion, after the manner of the "Model By-Laws," is seen carefully to, but the privy nuisance still holds its place. "The emptying of privies and ashpits in the hot season of the year is a subject that should receive serious consideration, and some arrangements should be made to facilitate the removal of their contents when required. It is difficult in many localities to get this done, for the time they require special attention is the very time that farmers are busy and do not require the night-soil." Dr. Mackintosh is unable to understand why powers granting compulsory notification of infectious diseases should be given to an urban sanitary authority and withheld from a rural. "The principles," he writes, "on which infection is spread are the same in urban and rural, and the lives of human beings are equally valuable in both." He regrets, also, the absence of hospital accommodation for infectious diseases in his district.

Leeds (*Urban*).—Dr. Goldie's report for the four weeks ending February 25th, 1882, shows a death-rate of 25·4 per 1000 population and a birth-rate of 38·0 per 1000. Deaths were registered during the month from each of the principal zymotic diseases, and a difficulty arose from an outbreak of small-pox in one of the out-townships, the Corporation not possessing any hospital accommodation for this disease. But the Board of Guardians came forward and assisted the sanitary authority out of its difficulty in this respect.

Reading (*Rural*).—Dr. Shea reports for this district in 1881 a death-rate of 7·6 per 1000 population; deaths from zymotic disease *nil*; and a birth-rate of 22 per 1000. No difficulty has arisen respecting the removal of refuse, except from one spot occupied by cattle. Difficulty is experienced in obtaining water from wells, because the soil is stiff clay for a great depth, and in dry seasons affords no water.

Mr. Dalton, of the Local Government Board, has been holding inquiries at Salford and Rochdale on propositions of the Corporations to amend their Improvements Acts. Among the provisions proposed to be added by the Corporations are several against the spread of infectious diseases.

At a recent inquest, held at Poplar, on the deaths of two children, the jury returned a verdict "that the deceased met their deaths from enteric fever, contracted through defective drainage."

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In twenty-eight of the largest English towns, 6128 births and 3767 deaths were registered during the week ending the 1st inst. The annual death-rate in these towns, which had been equal to 22·8 and 23·7 per 1000 in the two preceding weeks, was last week 23·2. The lowest death-rates in these towns during the week were 10·6 in Huddersfield, 16·1 in Leicester, and 18·1 in Cardiff and Birkenhead. The rates in the other towns ranged upwards to 30·3 in Bolton, 31·0 in Preston, 32·7 in Manchester, and 34·3 in Oldham. The deaths referred to the principal zymotic diseases in the twenty-eight towns were 637, and showed a further slight increase upon recent weekly numbers; 226 resulted from whooping-cough, 181 from measles, 71 from scarlet fever, 61 from "fever" (principally enteric), 43 from diarrhœa, 42 from diphtheria, and 13 from small-pox. The lowest death-rates from these zymotic diseases occurred last week in Birkenhead and Huddersfield, and the highest in Bolton, and Blackburn. Small-pox caused 10 more deaths in London and its suburban districts, and one each in Nottingham, Liverpool, Manchester, and Sheffield. The number of small-pox patients in the metropolitan asylum hospitals, which had steadily declined in the ten preceding weeks from 504 to 350, rose to 367 at the end of last week. The new cases of small-pox admitted to these hospitals were 83 last week. The deaths referred to diseases of the respiratory organs in London were 408, and were 110 below the corrected weekly average. The causes of 97, or 2·6 per cent., of the deaths in the twenty-eight towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Birmingham, Nottingham, Newcastle-upon-Tyne, and in five other smaller towns; while the proportions of uncertified deaths were largest in Sheffield, Bolton, Halifax, Preston, Bradford, and Oldham.

HEALTH OF SCOTCH TOWNS.

The annual death-rate in the eight Scotch towns, which had been equal to 21·7 and 22·5 per 1000 in the two preceding weeks, was 22·0 during the week ending the 1st inst., and 1·2 below the mean rate in the twenty-eight English towns. The deaths referred to the principal zymotic diseases in these towns, which had been 92 and 89 in the two previous weeks, declined to 73 last week; of these, 19 resulted from whooping-cough, 18 from diarrhœa, 14 from diphtheria, 13 from measles, 5 from scarlet fever, 4 from "fever," and not one from small-pox. The annual death-rate from these zymotic diseases averaged 3·1 per 1000 in the eight towns, and was 0·8 below the average rate from the same diseases in the English towns; this zymotic rate in the Scotch towns was only 0·7 in Greenock, while it ranged upwards to 8·3 in Paisley. The 19 fatal cases of whooping-cough showed a considerable decline from those in the previous week, but included 12 in Glasgow. The 14 deaths referred to diphtheria were also less numerous; 5, however, occurred in Glasgow, 4 in Edinburgh, and 2 both in Dundee and Aberdeen. The 13 deaths from measles corresponded with the number in the previous week, including 4 in Glasgow, 3 in Edinburgh, and 3 in Paisley. Diarrhœa fatality considerably exceeded that reported in the English towns; while the deaths from scarlet fever and "fever" were satisfactorily few. The 115 deaths referred to acute diseases of the lungs were within one of the number returned in the previous week, but were 31 fewer than those reported in the corresponding week of last year. The deaths of infants and elderly persons differed but slightly from recent weekly numbers.

HEALTH OF DUBLIN.

The rate of mortality in Dublin, which had been 31·2 and 34·9 per 1000 in the two preceding weeks, further rose to 36·0 in the week ending the 1st inst. During the first thirteen weeks of this year the death-rate in the city averaged no less than 35·1, against 25·6 in London and 20·0 in Edinburgh. Of the 240 deaths in Dublin last week 21 were referred to measles, 3 to "fever," 3 to whooping-cough, and 2 to diarrhœa. Thus 31 deaths resulted from these principal zymotic diseases, and were equal to an annual rate of 4·6 per 1000, showing a considerable decline from that which prevailed from the same causes in recent weeks, although it exceeded the rate recorded in London or Edinburgh. The fatal cases of measles in Dublin, which had exceeded 30 in each of the three previous weeks, declined to 21 last week; no fewer than 432 deaths from this disease were recorded within the borough during the thirteen weeks ending the 1st inst. The deaths of infants showed a decline, while those of elderly persons were more numerous than in any recent week.

HEALTH OF SPAIN IN 1881.

The Spanish official statistical bureau now issues excellent national monthly returns of vital statistics, with half-yearly summaries. The summary for the second half of 1881, which has just come to hand, enables us to consider the statistics for the entire year, and to compare them with similar figures for England and Wales. The estimated population of Spain in the middle of last year was very little short of seventeen millions of persons, among whom the recorded birth-rate was equal to 31·0, and the death-rate to 26·0 per 1000. The English birth- and death-rate last year was 33·9 and 18·9 per 1000 respectively. It follows, therefore, that the natural increase of population by excess of births over deaths, which in England was equal to 15 per 1000 of the estimated population, did not exceed 5 per 1000 in Spain. This contrast may have been partly due to defective registration of births, as it is improbable that the true birth-rate is so low as 31 per 1000; but after due allowance for this, the low rate of natural increase of the population in Spain is caused by the excessive death-rate. The rate of infant mortality in Spain is startlingly high; it appears that during last year the number of deaths of infants under one year of age was equal to 251 per 1000 of the births recorded—in other words, more than 25 of each hundred infants born die before they complete their first year of life, whereas in England last year this proportion of infant mortality did not exceed 13 per cent. It should be noted, however, that the apparent rate of infant mortality, calculated by this method, is probably somewhat overstated by defective registration of births. A considerable proportion of the excess of mortality in Spain is due to zymotic fatality. The death-rate in Spain from the principal zymotic diseases during last year was equal to 6·0 per 1000; whereas in England the rate from the same diseases did not exceed 2·2 per 1000. Scarlet fever and whooping-cough were less fatal last year in Spain than in England, while the rate of mortality from each of the other principal zymotic diseases (small-pox, measles, diphtheria, "fever," and diarrhœal diseases) was very considerably more than twice as high in Spain as in England. Small-pox caused 10,548 deaths in Spain last year, diphtheria and whooping-cough 10,404, "fever" (including typhus and enteric fever) 11,193, and diarrhœal diseases no fewer than 44,977 deaths. Although these mortality statistics present the sanitary condition of Spain under a most unfavourable aspect, it is due to that country to congratulate her upon the excellent form in which the statistics are furnished, and upon the administrative energy displayed in the issue of monthly reports for the entire country, giving in considerable detail the ages and causes of death, as well as the bare numbers. We know no other European country that attempts so much. We must again call attention to the serious statistical defect of their return as regards the calculated proportion of deaths to population. Instead of adopting the now universal method of the *annual rate* of mortality, the Spanish returns, whether for a month or six months, give the simple proportion of deaths in these different periods to population, which, for comparative purposes, is valueless.

ROYAL COLLEGE OF PHYSICIANS.

AT a meeting held at the Royal College of Physicians, London, on Monday, the 3rd inst., the following communications were considered:—From the University of London relating to the application made by the College for the loan of the laboratory at Burlington House for the purposes of examination four times in the year. Owing to the terms of their charter, the University of London were unable to comply with the request of the College; but the refusal is of little consequence, as since the request was made the College have wisely resolved to provide themselves with the necessary accommodation on their own premises for examining candidates for the licence in practical chemistry.—A letter was read from the Home Office requesting the College to afford information with a view to future legislation on the subject of the Sale of Poisons. A committee comprised of the most distinguished lecturers in toxicology, materia medica, and pharmacy was appointed to draw up a report, which should be forwarded to the Home Office. It was resolved that the responsibility of providing for the examination of candidates for the Murchison Memorial Scholarship should be entrusted to Sir James Risdon Bennett.

The PRESIDENT (Sir Wm. Jenner) then gave the annual presidential address, in the course of which he pronounced an eloquent and touching eulogy on the memory of the late Dr. George Budd and Professor Rolleston, and gracefully alluded to the distinguished merits of other Fellows of the College deceased during the past year.

On the motion of Sir Thomas Watson, the President was requested to allow the address to be printed.

The business of electing a president for the ensuing year was then proceeded with, and Sir William Jenner was unanimously re-elected.

WILLS AND BEQUESTS.

THE will of Mr. George Macilwain, F.R.C.S., formerly of 3, Albany Court-yard, Piccadilly, but late of Matching near Harlow, Essex, who died on January 22nd last, was proved on the 1st ult. by Mrs. Maria Margaret Macilwain, the widow and acting executrix, the value of the personal estate being over £6700. With the exception of some memorial legacies to friends and patients, the provisions of the will are wholly in favour of the testator's wife and his daughter, Anna Maria Quare Macilwain.

The will of Robert Charles Croft, M.D., of Camden-road, who died on February 26th last, was proved on the 14th ult. by Mrs. Anna Maria Croft, the widow and sole executrix, the personal estate exceeding in value £2500. The testator devises his freehold estate, the Ridgeway, Wimbledon, to his wife for life, or until she shall marry again, and then to his five children, Edith, Amy, Mabel, Lilian, and Oswald; the residue of his property he gives to his wife absolutely.

The will and two codicils of Richard William Wandby Griffin, M.D., of Southampton, who died on December 24th last, were proved on the 18th ult. by Mrs. Julia Augusta Griffin, the widow, Mr. John Griffin, and Mr. Richard Edward Griffin, the sons, the executors, the value of the personal estate amounting to nearly £1000. The testator bequeaths the silver testimonial presented to his late father by the Poor-law medical officers of Great Britain to his wife for life, and then to his son John, and the rest of his plate and all his furniture and effects to his wife. His real estate is directed to be sold, and the proceeds, with his residuary personal estate, held upon trust for his wife for life, and then for his children.

The will of Mr. Thomas Henry Cooper, of the Limes, Slough, Bucks, Physician to the Great Western Railway, who died on December 25th last, was proved on the 13th ult. by Mrs. Annie Elizabeth Cooper, the widow and sole executrix, the personal estate being over £800. The testator gives memorial legacies to his daughters and to his sons-in-law, and the residue of his estate and effects, both real and personal, to his wife.

The will of Augustus Springett, M.B., of Ashfield Lodge, Hawkhurst, Kent, who died on February 2nd last, was proved on the 11th ult. by Mrs. Sarah Elizabeth Springett, the widow and sole executrix, to whom he devises all his real estate, and bequeaths all his personal estate. The value of the personal estate exceeds £2000.

The following legacies have recently been left to hospitals and other medical charities:—Mr. John Appleton, of 8, Crosby-square, Bishopsgate, and 23, Barrington-road, Brixton, two-fifths of such sum of Consols as will produce £100 per annum, on the death of Emily Jago, to the Seamen's Hospital at Greenwich, late the *Dreadnought*.—Mr. Charles Pearce, of Wilbury-road, Hove, and Lindfield-place, Lindfield, Sussex, £1000 each to the Hospital for Sick Children, Great Ormond-street, and the Royal Infirmary or Hospital for Women and Children, Waterloo-road.—Mr. Charles Hodgson, of Southend Elvet, near Durham, iron merchant, £4000 to the Durham County Hospital, and £1000 each to the Convalescent Institution of the Counties of Northumberland and Durham, and the Convalescent Institution and Children's Hospital at Coatham, Redcar.—Mr. Samuel Hutchinson, late of Dublin, has bequeathed £100 to the Hospital for Incurables, £25 to City of Dublin Hospital, and £30 to the Coombe Lying-in Hospital.—Dr. Hans Irvine, late of Dublin, has left £100 to the Royal Medical Benevolent Fund Society of Ireland.

THE SERVICES.

ARMY MEDICAL DEPARTMENT.—Surgeon-Major William O'Halloran to be Brigade Surgeon, vice C. M. Jessop, retired on temporary half-pay. Surgeon-Major Isidore Bourke, M.B., half-pay, has been placed on the retired list.

MILITIA MEDICAL DEPARTMENT.—Surgeon-Major Wm. Alexander Barr, 3rd Battalion, the Northamptonshire Regiment, resigns his commission; also is permitted to retain his rank, and to wear the prescribed uniform on his retirement.

RIFLE VOLUNTEERS. 8th (S.W.) Middlesex: Surgeon Edmund S. Willett, M.D., resigns his commission.—1st Shropshire: Surgeon Alfred Mathias is granted the honorary rank of Surgeon-Major, and is permitted to continue to wear the uniform of the Corps on his retirement.

MEDICAL NOTES IN PARLIAMENT.

Union Officers' Superannuation.

IN the House of Commons on Thursday (March 30th), two petitions from branches of the British Medical Association were presented in favour of the Union Officers' Superannuation (Ireland) Bill, and further petitions from various Irish unions.

On Friday, petitions in favour of the Bill were presented from the North Wales Branch of the British Medical Association and the Irish Poor-law Officers' Association. Two petitions against it came from Farney and Naas.

Mr. Forster, in reply to Mr. Meldon, said it was true that Dr. Alex. Smiley, who had served for nearly thirty years as medical officer of the Ballycurry Dispensary District, had been compelled by broken health to resign his office, and had been refused any superannuation allowance by the guardians of the union. He (Mr. Forster) had no power to interfere, although he admitted that it was a hard case.

The Vaccination Acts.

Mr. Dodson, in reply to Mr. Burt, said there was nothing in Section 31 of the Vaccination Act of 1867 which limited it to children born before the Act came into operation, and he could not assent to the conclusion that that section was no longer required for its original purpose. He desired that the section should not be abused, but he had no authority to alter it.

Coffee and Chicory.

On Monday, Mr. Chamberlain, in answer to Sir E. Lechmere, stated that the Treasury Minute of Jan. 20th last, sanctioning the importation of mixtures of coffee and chicory, made no alteration in the law with regard to adulteration, nor, as he believed, did it tend to increase the practice of adulteration. The regulation was purely a revenue one, and permission to import such mixtures had been given in consequence of complaints of the previous restriction.

Typhoid in a Gaol.

On Tuesday, the Solicitor-General for Ireland stated to Mr. Healy that a prisoner in Clonmel Gaol had been

attacked with typhoid fever, and there had been two previous cases. All were traced to a defective watercloset. A complete inspection was made of the prison, the patient was removed outside, and there was no danger of any of the other prisoners having been affected by contagion.

The Lead Poisoning Case.

Questions referring to the death in Shoreditch Infirmary of Hannah McCarthy, from lead poisoning, were addressed to the Home Secretary by Mr. Burt and Mr. Broadhurst. Sir C. Dilke, on behalf of Sir W. Harcourt, stated that the whole question of the protection of lead-workers would be considered.

The House adjourned for the Easter recess.

Correspondence.

"Audi alteram partem."

SCIENTIFIC EXPERTS IN CRIMINAL CASES.

To the Editor of THE LANCET.

SIR,—The proposal of the Home Secretary to delegate to the Presidents of the two Colleges the task of selecting scientific experts in criminal cases has excited no little surprise in Edinburgh. With the Crown lies the responsibility of trying a person on a criminal charge, and on the Crown alone should rest the onus of all the evidence adduced. In such circumstances there should be no divided responsibility. The Crown, too, has the best opportunities of instituting inquiries as to the fittest men to act as scientific witnesses, far better than the proposed tribunal; for it cannot be denied that the distinguished dermatologist and the Court physician who at present so worthily fill the presidential chairs of the two Colleges would be compelled, to guide them in their selection, to solicit advice from those qualified to give it as to the respective merits of medical jurists and analysts.

My present object is, however, to draw the attention of your readers to the practice in Scotland. Fifteen days before the day of trial the prisoner has an opportunity of access to all the medical and chemical reports to be adduced in evidence against him, and no trial is ever commenced without all the scientific and other evidence proposed to be adduced by the Crown being completed at least fifteen days before. I observe that in Lamson's case there were postponements from time to time to allow of the completion of the scientific evidence. This involves hurry, and certainly places the prisoner at some disadvantage. Here, as I have said, he has fifteen days' cognisance of the evidence to be brought against him by the Crown, and he has thus ample opportunity of determining his line of defence. In addition, in Scotland no charge is preferred against a person in a criminal court on the testimony of a single expert. Thus in Madeline Smith's case there were the independent analyses of Dr. Penny and of Sir Robert Christison; in Pritchard's of Dr. Penny and Professor Maclagan; and in Chantrelle's, of Professor Maclagan, myself, and also of Professors Crum Brown and Fraser. In Miss Smith's and Pritchard's cases the scientific evidence was unassailed, but in the late case of Chantrelle's our city analyst appeared for the defence, and expressed doubts as to the validity of some of the tests relied on by the Crown witnesses. In Scotland, in all such cases it is expressly enjoined on the experts of the Crown that only a portion of the matters reserved for analysis be used; and this proviso is intended to meet the objection that the prisoner has no opportunity of verifying the results obtained by the witnesses for the prosecution.

In neither of the trials I have quoted was any application made on behalf of the prisoner that the contents of the stomach or portions of the viscera reserved should be handed over for independent analysis, so satisfied were the counsel with those conducted by the Crown experts.

What is required in England is that, in all cases, there be two independent analyses, the expense of which should, as in Scotland, be borne by the Crown, and that sufficient time be allowed the prisoner and his counsel to examine the reports of the Crown witnesses. Were this practice followed such proposals as that of the Home Secretary would be rendered unnecessary, and we would be spared the risk of an unseemly canvass for such deservedly honourable appointments. I am, Sir, yours truly,

HENRY D. LITTLEJOHN, M.D.

Surgeons' Hall, Edinburgh, April 1st, 1882.

SCIENCE AND SCEPTICISM.

To the Editor of THE LANCET.

SIR,—Some two or three years ago an article appeared in THE LANCET dealing exhaustively with the subject of evolutionary materialism and modern scepticism and infidelity; and while being a very decided protest against narrow-minded conclusions and inferences, drawn from scientific facts, to the disadvantage of faith and religion, the article referred to clearly and distinctly defined the then position of true science in relation to this great question now agitating the minds of all thoughtful and well-wishing men.

This article, valuable as it is, apparently created but little interest and controversy at the time, although I have reason to believe that it has been freely discussed and commented upon within the pale of the profession; and I have heard regret expressed that a more extensive circulation had not been secured to it.

Several years have elapsed since this article appeared, the field of our literature is literally covered with writings of a sceptical and negative tendency, the indifference to the claims of religion is rapidly becoming greater, its effects upon the minds of the community more and more visible, and men are beginning to wonder where we are to look for help from a future of faithlessness and atheism. The extensive diffusion of the principles of evolution, for the most part imperfectly understood, and the attitude of prominent men of science towards matters religious, have not failed to spread their influence over the minds of men and women of almost all classes of society; and it has gradually come to be supposed that faith in God, the responsibility of man, and the immortality of the human soul are conceptions of an uncultivated and bygone age, and no longer tenable when viewed in the light of our modern science. A scorning scepticism appears to be the leading principle of modern thought. The Bible is ridiculed, the arguments of Paley and Butler, conclusive though they are, are rejected as silly and old-fashioned, and the higher moral attributes of man are pronounced visceral in their nature and physical in their origin. Metaphysical, historical, and theological arguments have wholly ceased to exert an influence, and the many endeavours of able and learned men of the Church to check the evil appear to be useless. Science alone is quoted; physical science reigns over the minds of men! It is evident, therefore, that the time has come when a tremendous effort is needed, and that on the part of true Science herself, to check the course of the malady, and to recall the intellect of our age to reason and common sense.

Your valuable paper has often shown that the healing profession is keenly alive to *all* human pains and weaknesses, and the very article quoted plainly proves that this great sore has not been overlooked. Whenever the subject of religion has been mentioned in the columns of THE LANCET it has been treated in a liberal, tolerant, and sincerely reverential spirit. Men eminent for their attainments in the medical world have again and again proved themselves fully alive to this great social and intellectual disease, and I need only refer to Sir James Paget's address, delivered at Clergy School, Leeds, to show how deeply the very leaders of the profession are interested in the matter.

At first sight the subject may not appear to come within the legitimate sphere of the physician, but when all other means and remedies have failed, and we are compelled to look to physical science alone for an absolute and incontrovertible proof of the veracity of the religious instinct in man, who is better qualified to express reliable views than he whose constant study and subject of investigation are the physical organisation and the mental attributes and character of man?

The article referred to appears to me to touch the very root of the question, and to establish a true scientific and, if I may so term it, physical basis of religion, and the value of such principles, acquiesced in by members of the profession, cannot be too highly estimated at a time when this very profession is openly and constantly charged

with the promulgation of indifference and scepticism. It seems to me to be indeed the duty of true science, and more especially the science of man (physiology), to distinctly define her position with regard to this great question, to secure to wavering mankind the scientific basis of faith and religion, and to demonstrate conclusively the origin and rationality of belief. At a time when so-called science is credited with the most incomprehensible absurdities, a clear and distinct definition of the true scientific state of the question becomes again and again necessary, and many are hoping with me that in the name of the profession you will once more sound the voice of reason, of common sense, and of science. I remain, Sir, your obedient servant,

March, 1882. VERITAS.

THE RED CROSS SOCIETY v. THE INTERNATIONAL MEDICAL AID SOCIETY.

To the Editor of THE LANCET.

SIR,—Permit me space to call the attention of intending competitors for the prizes offered by the International Committee of the Red Cross Society to the following facts: that a large number of both imperial and colonial troops is more or less constantly employed against wild savage foes, who never give quarter and never expect it (fights or battles with these savages generally take place either in the bush, jungle, or on the rocky precipitous sides of mountains, and most of the wounded fall in such places); that the troops so engaged take the field with only absolute necessaries, and sometimes without medical aid; that there is nothing within reach for "improvising the means of transport of the sick or wounded"; that hitherto "art" has not been of much avail in this direction—i.e., in the kind of wars I refer to, and all the skill practicable for the instant removal of the wounded from the savage enemy is generally centred in some personal act of bravery, or strength and coolness of a comrade, as is instanced by the following gallant conduct. Surgeon-Major Hartley, V.C., Cape Colonial Forces, removed several wounded men, shot down at an advanced post on a ridge of a mountain, by placing the patients across his knees and sliding slowly down the dangerous rocky path; this position offered a chance of cover to both patient and bearer. Still, even in this manner, one wounded man received a second shot whilst being conveyed to shelter. Another instance was that of Mr. Orpen, the governor's agent in Basutoland. This gentleman removed a wounded man from under a severe fire by placing the patient on his (Mr. Orpen's) back, and by crawling along the ground to a place of safety.

Now, Sir, most authors when dealing with subjects mentioned for prize essays generally refer to wars in civilised countries, where plenty of material generally exists to work upon; but in the wars I refer to there are usually no materials to work upon. Sometimes a blanket, a water-proof sheet, an ox skin, and a water-bottle or brandy-flask, and a few bandages may be obtained; but the first-named would not be of service in cases I have quoted. I trust, therefore, that intending competitors for the prizes now offered by the International Committee of the Red Cross Society will not overlook the point I have ventured to mention.

Further, *à propos* to this subject, I believe if the International Committee of the Red Cross Society would but take into consideration some vast scheme for forming depôts of medical and surgical appliances or comforts for the aid of the sick and wounded in war, with the ultimate view of relieving parsimonious Governments and all army medical departments altogether of the responsibility of providing medical and surgical appliances and comforts or equipment generally, that a great international army medical relief reform would be effected, and that we should not hear of appliances running short, or of supplies being exhausted, or medical departments coming to grief (which means increased bodily suffering of the sick and wounded) any more. In civilised war friends and foes can have but one common interest in their sick and wounded, and by the aid of this scheme both sides could draw their supplies from one common centre.

Again, this huge plan might develop itself into one vast International St. John's or St. Mary's Medical and Surgical Aid Society or Red Cross Society, absorbing all other societies of the like character, the red cross being the doctors' flag, the white cross the sisters' or nurses' flag, and the blue cross the equipment flag, or signs of departments.

Lastly, the various depôts might establish exhibitions of inventions and appliances, offer prizes for the best essays upon army medical organisation in times of peace or war, and for original inventions, &c., form schools of instruction, read papers, encourage discussions, publish transactions, and distribute gold, silver, and copper medals in a similar manner to other learned societies.

The scheme could be one vast measure of centralisation, to grasp one universal common cause, interesting alike to all nations and tongues of the world where Christianity exists.

I am, Sir, yours obediently,

South Africa, Feb. 18th, 1882. S. CARTWRIGHT REED, M.D.

"THE CAUSE OF THE DUCHESS OF CONNAUGHT'S ILLNESS."

To the Editor of THE LANCET.

SIR,—*A propos* of Dr. Playfair's "Note on the Sanitary Condition of Bagshot Park," which appeared in THE LANCET of March 18th, the following short account of the sanitary arrangements of a detached villa, which I was called upon to inspect a week ago, may be considered interesting. The house is a good one, built a few years ago, regardless of expense, as a residence for the late owner and his family. The present tenant left his last house on account of its defective sanitary condition, and was assured on taking this one that he might rest thoroughly satisfied that everything in connexion with the premises was complete and perfect in every way. After a short time, however, the members of the family became conscious of an offensive smell in the house, and several of them got out of health, suffering from lassitude, general malaise, drain throat, &c. I was then requested, in my official capacity, to investigate the sanitary arrangements of the house, and with the following result.

In the cellar, in which the smell was most offensive, the flags were raised, and a horrible cesspool of sewage was exposed. The butler's pantry is above this cellar, and the waste-pipe from the sink in it was found to pass just through the outside wall of the house, and end there without any connexion to a drain. The result was that all the dirty water which ran from this sink since the house was built, seven years before, had percolated down and through the wall of the house, and underneath the foundations, forming the cesspool of sewage mentioned. Two feet from the end of the defaulting waste-pipe was found the pot-pipe drain, which had been specially laid to receive it, but, owing to gross carelessness, the connexion had never been made. On further investigation, there was found immediately underneath the cellar flags, and running all the length of the house, an open stone drain, which communicated directly with the sewer, and which received in its course an untrapped waste-pipe from the wash kitchen sink, a large untrapped overflow-pipe from a cistern in the attic, and three untrapped drains from open grates in the larder and other cellars. The waste-pipe from the scullery sink communicated directly with the sewer, the pot-pipe which received it coming inside the wall of the house. Opening from the scullery was a watercloset for the servants, with the soil-pipe passing down inside the wall of the house, and ventilated only by a small fall-pipe from the scullery roof, the upper end of which fall-pipe opened directly underneath a bedroom window. The overflow-pipe of the cistern for this closet, which was immediately close, passed directly into the soil-pipe. On the first floor was another watercloset, with soil-pipe unventilated, save by the overflow-pipe of its cistern, which passed directly into it and conveyed its gases into the attic. The soil-pipe received also the waste-pipe from a urinal. The waste and overflow-pipes of the bath were found to be untrapped, and they discharged into a fall-pipe, which communicated directly with the sewer. The waste-pipe of a wash-basin in the bath-room was trapped, but it opened into the waste-pipe of the bath, and its trap was, of course, unsyphoned every time that the bath was emptied. The waste-pipe of a wash-basin in one of the bedrooms passed directly into the sewer. The pipes which conveyed the rain from the roof of the porch passed directly into the sewer and ventilated it underneath a bedroom window. These arrangements speak for themselves. From the cellar floor to the roof this house was pervaded by an atmosphere of sewer-gas. Similar arrangements, I have no doubt, exist in thousands of well-built modern villas, where they are least suspected,

as well as in humbler dwellings. It is probable that hundreds of deaths are due to them every year. It is to be hoped, then, that Dr. Playfair's note, and the notable circumstances under which it was written, may be the means of directing more general attention to the fact that many diseases are caused and many aggravated by the presence of sewer-gas in our houses.

I am, Sir, yours truly,

W. J. SMYTH, M.D.,

March 18th, 1882. Medical Officer of Health, Shipley, Yorkshire.

THE CHEMICAL LUNG.

To the Editor of THE LANCET.

SIR,—In your account of the demonstration given at my house, showing the power of the chemical lung as punkah in cleansing the air of sick rooms and other places, no allusion is made to the mode by which I would guarantee to purify any tunnel or large building such as a theatre or a church.

The tunnel air can be readily and satisfactorily purified by being passed through a carriage specially provided with trays of slacked lime, or it could be driven through a travelling tank by the aid of a fan, worked by the wheels on which it rides. The punkah plan is not adapted for very large quantities of air; but one that has been at work for many days in a mission-room crowded with poor people has rendered the air, which was previously most objectionable, cool and pleasant.

In the case of large buildings, the air would be sucked out by means of a fan, passed through the chemical solution, and reintroduced in such a manner as to avoid draught, and having its temperature regulated at discretion.

I am, Sir, yours truly,

RICHARD NEALE, M.D. Lond.

Boundary-road, South Hampstead, March 31st, 1882.

"AN EXTRAORDINARY MORPHIA CASE."

To the Editor of THE LANCET.

SIR,—I am glad to see that the publication of my morphia case has induced Dr. Cass to record a greater, as far as mere quantity of the drug is concerned. It behoves all those who can authenticate the amounts to publish their cases if they are at all extraordinary, and not to do so only when they think they can beat the "greatest on record." Quantity is only one point in such a question. De Quincey ate three hundred and twenty grains of opium a day, equal to (say) thirty grains of morphia, and are no scores below this worthy of note? I am aware that twenty grains of morphia a day have many times been administered hypodermically, and as a *dernier ressort* in cancer cases large doses are often given, and are without doubt justifiable. In painful diseases there is usually great toleration of opium, as of alcohol in syncope, but absence of pain considerably alters the question.—I am, Sir, yours truly,

PERCY BOULTON, M.D., M.R.C.P. Lond.

Seymour-street, Portman-square, March 25th, 1882.

ETIOLOGY OF TYPHOID FEVER IN INDIA.

To the Editor of THE LANCET.

SIR,—Of the various subjects which were discussed in the military section at the Medical Congress none is of greater interest than the above. Important in itself, it is rendered more so by some of the theories which have been advanced and your comments on them, for in scientific medicine a theory means a basis for a line of treatment, which latter must be wrong if the theory on which it is based be erroneous. Surgeon Martin put forward the theory that the climatic condition of India caused increased hepatic action, with a subsequent reaction, in which the liver was not properly performing its functions, and that to compensate for this latter state of the liver certain intestinal glands became more active, and performed vicariously a compensatory action for the shortcomings of the liver; that this state of abnormal activity in the intestinal glands led to congestion, inflammation, and the production of the peculiar ulceration pathognomonic of typhoid fever.

If this theory be true it deserves to be widely known, for I apprehend that its practical application would mean the careful watching of the state of the liver of all soldiers arriving in India until what I may call the typhoid period has passed, lest disorder of its functions and vicarious action of the glands may set up typhoid fever; and if it be not true, the sooner it is discarded the better, as it may have the effect of preventing inquiry after causes which are proved to have intimate relation to the occurrence of this fever. You remark that this theory serves to explain those cases of typhoid fever which cannot be traced to filth causes; but does it? I am unaware of one fact to support it, but there are many with which it is completely at variance; for instance, on what grounds is it stated that the glands affected in typhoid fever are capable of acting vicariously for the liver? To me it is a new physiological doctrine. Again, all writers are agreed that the lesion of the intestinal glands is but the local expression of a general state existing in the system, and does not take place till the fever has existed for some days; but Surgeon Martin's theory would make the glandular affection the starting-point, and would hold the local lesion responsible for the specific constitutional state, whilst the best observers hold exactly the opposite opinion. Many cases of small-pox occur which cannot be traced to the specific cause in any way, and it would appear quite as reasonable to say they were of climatic origin, and take the pustule or papule as the starting-point, as to hold this theory of the origin of typhoid fever.

If this liver and climatic theory be right the natives of India should suffer much from this fever; but that they do not is notorious, and some even deny that they suffer from it at all. But the latter statement is not true, as I have seen undoubted cases, verified by post-mortem examination. Soldiers ought also to suffer more than they do, as they are all exposed to the climatic conditions which are supposed to cause it. Soldiers suffer most during their first year of service in India, less in their second, and extremely rarely in their third. Speaking generally, the longer a man resides in India the more his liver becomes deranged, and we should expect to find more vicarious action and consequent typhoid fever; but this is exactly what we do not find, nor is functional derangement of the liver a symptom observed to precede typhoid fever.

Surgeon-General Maclean's doctrine of the ever-pythogenic origin of this fever has much evidence in support of it, whilst the theory of its other than pythogenic origin is, to say the least, questionable, and rests mainly on negative proof. That we should be always able to trace the pythogenic cause is not at all necessary to prove its presence, for it would be as logical to deny the specific nature of small-pox because we could not trace the origin of a case to its specific contamination. That the natives of India suffer from typhoid fever is now pretty generally admitted, and this fact, read by the light of Pasteur's wonderful statements relating to the manner in which disease germs may lie dormant and the strange manners in which they may subsequently be brought within striking distance of their victims, should at least make us pause before advancing theories opposed to much weighty evidence regarding the causation of this fever.

That the insanitary starting-point of this fever should always be sought for *outside* the body of the patient is, I am convinced, an error, for I have observed cases in which the main symptoms were foul breath, slight abdominal cramps and tenderness, headache and diarrhœa, accompanying intermittent fever, the true nature of the digestive troubles being revealed by a purgative, which usually brought away some undigested and decomposing animal ingesta; and is it unreasonable to suppose that such decompositions inside the body are capable of forming a starting-point for this fever? These peculiar dyspeptic symptoms, with foul eructations, were always observed amongst the newly arrived drafts, and were not observable in the case of the older soldiers, whose dyspeptic troubles, when suffering from intermittent fever, were almost *nil*. Bearing in mind this fact in connexion with the liability of the newly arrived soldier to typhoid, I think it is a question well worthy of serious consideration how far the diet of the soldier on arrival in India is suited to the altered circumstances in which his digestive powers have to act and their power of dealing with the quantity of animal food consumed before he has passed the typhoid period, most of the cases occurring during the first six months after arrival.

With regard to the so-called typho-malarial fever, I may mention that I have just had in hospital a case of typhoid fever in the person of a young soldier, of four months' Indian service, who, during his illness, had ague, followed by intermittent fever every second day during eight days of his typhoid disease, that ran its ordinary course, imparting to or receiving from the typhoid no special characteristic. Such cases, I am informed, are by no means rare, and they seem to prove, not the existence of a hybrid fever, but only that one fever does not confer immunity from the other, and that they may run their respective courses *pari passu*.

The whole question is of vast importance, especially to military medical officers serving in this country, and whoever broaches a theory respecting it does a service, even if his theory serve no other purpose than to enable it to be refuted, for, if in no other way, we may by a process of exclusion arrive at a definite conclusion regarding the etiology of typhoid fever in India.

I am, Sir, yours faithfully,
ARTHUR M. KAVANAGH,
Surgeon, A.M.D.

Delhi, Bengal, Sept. 1881.

GLASGOW.

(From our own Correspondent.)

THE eighty-seventh annual report of the Glasgow Royal Infirmary, just issued, contains some points worth noting. In the first place, it is stated that the ordinary revenue fell short of the ordinary expenditure by rather more than £5000, necessitating an encroachment on capital stock. It is announced that the buildings for the accommodation of the Infirmary Medical School are nearly completed, and will probably be ready for occupation in time for the summer session. The cost of these buildings has been defrayed by a special fund, which has been large enough to leave over a sum for maintenance, all this having been done without any appropriation of the general funds of the hospital. The proposal to amalgamate with Anderson's College Medical School is still under the consideration of a small committee. The difficulties which stand in the way of this scheme do not seem to diminish. The managers of the infirmary refer with regret to the death of their cashier, but actually take no notice whatever of the loss the institution sustained in the death of Dr. D. Foulis some time ago. This omission is exciting much comment, in professional circles especially. The managers seem strangely to undervalue the work of those on whom the fame of the infirmary depends; they have entirely lost the opportunity of doing a graceful thing.

The medical session in the various schools has now been brought to a close by the usual speech-making and distribution of prizes. At the Western Infirmary Medical School short addresses were given by Drs. Gairdner, Macleod, and Buchanan. The first-named gentleman explained that, notwithstanding all the experience he had recently gained on his tour of visitation at the request of the General Medical Council, he had learnt very much at the clinical examination just passed, and expressed no doubt that every university and corporation in the kingdom could learn something from the proceedings of every other corporation or university if they so chose. Dr. Macleod compared present times with past, very much to the advantage of the former, stating that the great bulk of students nowadays showed a knowledge of surgical work immensely superior to that shown when he himself was a student. Dr. Buchanan defended the view that the presence of students was essential to the well-being of every hospital.

At Anderson's College the closing meeting of the session was of the ordinary kind, all of the professors reporting favourably of the work of the past session. The attendance at this school seems to be well maintained.

The meeting at the Royal Infirmary School was remarkable for nothing but the unusually disgraceful conduct of the students.

The struggle for the Examinership in Surgery at the University is keen. Two names are mentioned prominently in connexion with it: those of Dr. J. Dunlop and Dr. W. McEwen.

PARIS.

(From our own Correspondent.)

DR. DURAND FARDEL, one of the leading physicians of Vichy, read a most interesting paper at the last meeting of the Société Française d'Hygiène, on the Hygienic and Medicinal Properties of the Natural Gaseous Waters, compared with those artificially produced. These artificial waters are produced either by the action of an acid on an alkaline salt, the result being carbonic acid, or by simply saturating drinking water with that gas. In the first case, the water is a solution of an alkaline salt (generally the bicarbonate of soda) in which the resulting gas is retained, and forms the old-fashioned soda-water; whilst in the other case the gas is produced separately, and the water is charged with it by pressure, which is effected by a particular apparatus constructed for the purpose; this constitutes the artificial Seltzer water, or "Eau de Seltz," so commonly used in all classes of society. Dr. Durand Fardel pointed out the inconvenience, and even danger, to which the manufacturers themselves are exposed in the fabrication of these waters, and also in their indiscriminate and habitual use. He deprecated the daily drinking of mineral waters, whether natural or artificial, unless prescribed by a medical man, as being, after all, nothing but medicated solutions. Their local influence on the stomach must be injurious, for they distend that organ to an inconvenient degree, not only from the amount of liquid ingested, but the quantity of gas that accompanies it. There is no doubt that a great number of dyspeptic cases that are met with in civilised countries owe their origin to the abuse of mineral waters; the result being undue dilatation of the stomach, and the production of atonic dyspepsia, one of the most harassing forms of the malady for both patient and physician. Moreover, besides this inconvenience, which is not of small importance, it was pointed out long ago by Trousseau that the prolonged use of alkaline waters affects the composition of the blood in such a way as to produce profound anæmia, and consequent general deterioration of the constitution. If these objections are justifiable against the natural mineral waters, they apply with double force to the artificial mineral and gaseous waters so much in vogue at the present time. Dr. Durand Fardel concluded his communication with the announcement that he had no intention of attempting to bring about a reformation in the habits of the people; but thought that, with his experience, which is of some extent, he might venture to give some advice in the matter, which he formulated as follows:—(1) The continued use of gaseous drinks ought to be considered, in a general way, prejudicial to health. (2) In the occasional or temporary use of these drinks, it is immaterial whether they be artificial gaseous or natural mineral waters, according to the indications of the case. (3) For habitual or continued use, artificial gaseous waters are most injurious, and ought to be absolutely proscribed. (4) One ought to guard against the prolonged or habitual use of natural mineral waters in a great state of effervescence. (5) The use of the least effervescent natural mineral waters, particularly the carbonated, may be continued with less inconvenience.

A medical commission was lately organised in England for the purpose of inquiring into the dangers to public health that may result from the proximity of hospitals specially appropriated to the treatment of small-pox patients. The English Government applied to the French Government for the report of the inquiry that had been made in France on the same subject. The Minister of Public Instruction referred the matter to the Academy of Medicine, and the following are the conclusions arrived at by that body:—(1) That there does not exist in France any hospital specially devoted to small-pox patients, as is the case in Great Britain. (2) During the siege of 1870-71, the Bicêtre Hospital had been reserved for variolous patients amounting to 15,000, and from the report of the inquiry as to the result of the experiment, the impression was favourable for the establishment of special hospitals. (3) That various reports and communications had been made by physicians to the Council of Hygiene and to various learned Societies respecting the risks that may arise from the proximity of the conglomeration of variolous patients, and the question was asked whether this system would not offer greater risks for the aggravation and spread

of the malady, and various suggestions were made to the effect that the system of reserving buildings to small-pox patients would constitute so many foci more or less energetic from which infection would radiate. Here ended the report, and I am afraid that it will be consigned to the archives, where it will remain without ever seeing daylight again.

In my letter of the 11th ultimo, I referred to the increase of mental affections in this country. That increase is so marked, that for the last five or six years the lunatic asylums in the Department of the Seine, of which there are no less than four, have been found quite insufficient for the accommodation of this class of patients. It is therefore in contemplation to build a new hospital, which will contain 1200 beds. The cost is estimated at 4,212,000 francs, or £168,480. The cost of each bed will amount to 3510 francs, which will be considerably less than that of the other asylums of the department, for at Sainte-Anne each bed costs 7670 francs; at Vaucluse 6100 francs, and at Ville Evrard 5325 francs per annum.

At a recent meeting of the Academy of Sciences, the report of the committee for the election of a member in the place vacated by the death of Professor Bouillaud, in the section of medicine and surgery, was read, MM. Charcot, Sappey, Davaine, Paul Bert, and Brown-Séquard being presented as candidates. The following is the order of recommendation in which the candidates were placed:—(1) Davaine, (2) Charcot, (3) Brown-Séquard and Paul Bert, and (4) Sappey. Paul Bert obtained the highest number of votes, and was consequently enrolled among the academicians.

At the meeting of the Academy of Medicine, on the 28th of March, the election of a member in the room of Maurice Raynaud, deceased, in the section of medical pathology was announced. M. Bucquoy was the successful candidate. The struggle was rather a hard one, MM. Siredey, Lecorché, Bail, Cadet de Gassicourt, and Ollivier being the candidates that were presented.

Paris, April 4th, 1882.

Medical News.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—The following gentlemen passed the Primary Examination in Anatomy and Physiology at meetings of the Board of Examiners on Monday and Tuesday last:—

L. Larmuth, Thomas Calrow, Joseph E. Parker, William O. Shaw, Frank Thorpe, J. W. Talent, and R. T. Williamson, Owens College, Manchester; Arthur Morley, William Greenwood, and E. G. Morris, Leeds School of Medicine; Charles J. Heath, St. Bartholomew's Hospital; George H. Weston, Edward W. Reid, and H. W. G. Mackenzie, Cambridge; W. H. Wigham, M. J. Wakefield, J. S. Revely, and James H. Crouch, Newcastle-on-Tyne College of Medicine; H. H. Lankester, St. Thomas's Hospital; Harold C. Ling and Thomas B. Macfarlane, Glasgow; Arthur W. Collins and Charles B. Cooper, Liverpool; Henry S. Cook, Charles E. Purslow, and Arthur F. Messiter, Birmingham; William G. Thorold, Bristol; John H. Scott, Dublin; N. P. Sinha and S. P. Roy, Bengal; Hunter J. Barron, Edinburgh and St. Thomas's Hospital; Gregory Jordan, Bengal; Robt. C. Priestley, King's College; Procter S. Hutchinson and John Thomas, London Hospital; T. F. W. Harragin, Charing-cross Hospital; J. H. E. Brock, University College; H. W. R. Bencraft, St. George's Hospital; Robert Blackwell, Manchester.

APOTHECARIES' HALL.—The following gentlemen passed their examination in the Science and Practice of Medicine, and received certificates to practise, on March 30th:—

Clay, Augustus Frederic, Steelhouse-lane, Birmingham.
Daunt, Elliot, Little Stanhope-street, Mayfair.
Forrest, James Rochold, Munster-terrace, Fulham.
Lota, Antoine Louis, Couley (Var), France.
Norry, William Augustus, Wokingham, Berks.

The following gentlemen also on the same day passed the Primary Professional Examination:—

Howard Harris and James Whicher, Charing-cross Hospital; Allan Perry, London Hospital.

A CENTENARIAN.—A woman named Thompson died last week at Enniskillen in her 102nd year.

DR. BATEMAN, of Norwich, and of Burlingham Lodge, Alburgh, has been appointed a Magistrate for the County of Norfolk.

VACCINATION GRANTS.—The following gentlemen have received the Government grant for efficient vaccination in their respective districts:—Mr. Robert Williams, Kingsland, Herefordshire (second time); Mr. John Deane, South Hornsey; Dr. Yarrow, Old-street, St. Luke's (second award).

THE Duchess of Edinburgh is announced to lay the corner stone of the new Convalescent Home, Folkestone, on the 18th inst. The building will cost £16,000.

THE BRITISH HOME FOR INCURABLES.—The Lord Mayor presided at the recent dinner to celebrate the coming of age of this institution. Subscriptions to the amount of £1700 were announced.

INTELLIGENCE received at New York from Yankton, Dakota, announces that the lunatic asylum at that place has been destroyed by fire. Three of the patients perished in the flames.

A COLOURED physician has been appointed assistant at the Central Lunatic Asylum, Richmond, Virginia. The appointment, made by a board of directors chosen by the governor, is noteworthy as the first in which a coloured man has been elected by the State to fill a prominent office.

A MOVEMENT has been set on foot to provide a memorial to the late Dr. Yeates of Walthamstow. It is intended to erect a monumental tomb in the cemetery, and should there be a surplus it will be given to the Children's Hospital.

AT the annual meeting of the friends of the Aberdeen Hospital for Incurables, held on the 27th ult., it was unanimously resolved that instructions be given to the committee to consider the expediency of providing the necessary accommodation for male consumptive patients, and, unless there be serious objection, to proceed with the work forthwith.

HOSPITAL SUNDAY AND SATURDAY AT MANCHESTER.—The fifth published list of collections on behalf of the medical charities of Manchester and Salford shows that in respect of Hospital Sunday a sum has been paid into the bank amounting to £4949 4*s.* 4*d.*, and in respect of hospital Saturday—being subscriptions of artisans in their mills and workshops—£2506 2*s.* 8*d.*, making the total fund at the present time £7455 7*s.*

BRISTOL ROYAL INFIRMARY.—The secretary was able, at the meeting of the annual general board of trustees held on March 28th, to make the satisfactory announcement that the large accumulated debt shown at the end of 1880 had been cleared off. The balance, however, between the receipts and expenditure for the last year showed a serious deficit, notwithstanding the amount of success with which the late canvass had been attended.

VICTORIA PARK HOSPITAL.—The annual festival of this hospital, intended to be commemorative of the opening of the new wing, affording accommodation for forty patients, was held on the 28th ult., under the presidency of the Lord Mayor. The annual expenditure, it appears, amounts to over £10,000, while the income from subscriptions and other permanent sources does not exceed £3600. The number of in-patients during the year had been 920; of out-patients, 13,885.

LEEDS GENERAL INFIRMARY.—The annual general board of governors of this hospital was held on the 29th ult., when a satisfactory report was presented. The number of in-patients who had been treated during the past year was 3789. The mortality rate was 5·48 per cent., including 60 patients who died within forty-eight hours of admission. The receipts had been £14,996, and the expenditure £12,840. The excess of receipts over those of the year 1880 (£857) was attributed chiefly to the interest on additional investments and to greater liberality on the part of workpeople.

Medical Appointments.

Intimations for this column must be sent DIRECT *to the Office of* THE LANCET *before 9 o'clock on Thursday Morning, at the latest.*

BREACH, J. FREDERICK, L.R.C.S.Ed., L.S.A.Lond., has been appointed Medical Officer to the Chelsey District of the Walling ford Union.

BURGESS, F. JOSIAH, Ext. L.R.C.P.Lond., F.R.C.S.Eng., has been reappointed Medical Officer to the Fifth District of the Bethnal green Union.

CARSON, STEWART, jun., M.B., C.M.Ed., has been appointed Medical Officer to the First District and Workhouse of the Aston-with Garrigill Union.

FRASER, FRANK, M.B., C.M., L.R.C.P.Ed., L.R.C.S.Ed., has been appointed Medical Officer to the Fifth District of the Sevenoaks Union.

HALL, EDMUND T., L.R.C.P.Ed., L.R.C.S.Ed., L.S.A.Lond., has been appointed Medical Officer to the Chew Magna District of the Clutton Union.

HOPKINS, H. CULLIFORD, M.R.C.S., Pathological Registrar and Curator to the Royal United Hospital, Bath, has been appointed Assistant-Surgeon to the Hospital.

HUGHES, JOHN, F.R.C.S.Eng., L.S.A.Lond., has been reappointed Medical Officer of Health to the Carmarthen Urban Sanitary District.

LEE, HERBERT GROVE, M.D. St. And., M.R.C.S., L.S.A.Lond., has been appointed Medical Officer to the Haddenham District of the Aylesbury Union.

MCCRACKEN, JOHN, M.B., C.M.Glas., has been appointed Medical Officer to the Easingwold District of the Easingwold Union.

PICKWORTH, ALFRED J., L.R.C.P. Ed., L.F.P.S. Glas., has been appointed Medical Officer to the Second District of the Aston-with-Garrigill Union.

PYE, WALTER, F.R.C.S., has been appointed Examiner in Surgery and Clinical Surgery at the University of Glasgow.

SALTER, JOHN REYNOLDS, M.B.Lond., M.R.C.S., L.S.A.Lond., has been appointed Second Assistant Medical Officer to the Kent Lunatic Asylum.

STEER, WILLIAM, M.R.C.S., L.S.A.Lond., has been appointed Assistant Medical Officer and Dispenser to the Infirmary of St. Olave's Union.

Births, Marriages, and Deaths.

BIRTHS.

BANTOCK.—On the 29th ult., at Granville-place, Portman-square, the wife of Granville Bantock, M.D., of a daughter.

GRACE.—On the 19th ult., at Park House, Thornbury, Gloucestershire, the wife of Dr. Edward Mills Grace, Coroner for the Lower Division of Gloucestershire, of a son.

GREVES.—On the 28th ult., at The Hollies, Shrewsbury, the wife of E. Hyla Greves, M.B., C.M., of Oxford-street, Abercromby-square, Liverpool, of a daughter.

GWYNN.—On the 28th ult., at Hampstead-hill-gardens, the wife of Edmund Gwynn, M.D. (prematurely), of a son, stillborn.

NICHOLSON.—On the 30th ult., at Coburg, the wife of Gilbert de Poulton Nicholson, M.D., of a daughter.

MARRIAGES.

COMRIE—LONGMIRE.—On the 18th ult., at Newton Abbott, Peter Comrie, M.D., to Mary Jane, youngest daughter of Mr. William Longmire, of East-street, Manchester-square, and Osnaburgh-street, N.W.

JACKSON—SWEET.—On the 30th January, 1882, by special licence, at Holy Trinity, The Hill, Port Elizabeth, by the Rev. T. E. Bennetts, Andrew Christopher Jackson, M.R.C.S., L.R.C.P.Ed., L.M.Lond., L.M.Edin., of Cape Town, to Susanna Florence, widow of the late William Thompson Sweet, Merchant, of Idol-lane, London, and Petersham, Surrey.

RING—SINCLAIR.—On the 21st ult., at St. James's, Belfast, James Ring, M.D., Surgeon A.M.D., to Margaret Fitzgerald, daughter of Deputy Surgeon-General J. Sinclair, M.D., Principal Medical Officer, Aldershot Division.

WALKER—BLUNDELL.—On the 1st ult., at St. Paul's Church, Port Alfred, South Africa, Lawrence Newman Walker, L.F.P.S Glas., L.S.A.Lond., youngest son of William Newman Walker, F.R.C.S.E., of Grange-park-crescent, Ealing, to Florence Isabel, fourth daughter of H. C. Blundell, Esq., of Port Alfred.

DEATHS.

BLEST.—On the 1st inst., at Norfolk-terrace, Bayswater, Anthony E. Blest, M.D.Edin., M.R.C.S., Retired List, H.M. Indian Army, aged 85.

CURTIS.—On the 28th ult., at his residence, Norfolk-square, Brighton, James Curtis, M.R.C.S., aged 66.

GRAVES.—On the 31st ult., at his residence, Barton-street, Gloucester, after a long and painful illness, Ryves William Graves, F.R.C.S.E., J.P., deeply regretted.

HADAWAY.—On the 31st ult., at 47B, Welbeck-street, Cavendish-square, of bronchitis, Mary Ann, the beloved wife of Dr. J. Hadaway, aged 55.

HOFFMAN.—On the 31st ult., at Coombe Lodge, Putney-heath, George H. Hoffman, M.R.C.S.

JONES.—On the 22nd ult., at Wolverhampton-street, Dudley, Alfred Jones, Surgeon, aged 59.

O'BRIEN.—On the 24th ult., at St. Helier's, Jersey, T. O'Brien, F.R.C.S., Surgeon, Bengal Army (Retired List), deeply regretted.

STONE.—On the 3rd inst., at Victoria-road, St. Leonards-on-Sea, Charles H. Stone, M.D.

WAGHORN.—On the 30th ult., at Aldershot, Frederick Waghorn, M.D., Surgeon-Major, Army Medical Department.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

METEOROLOGICAL READINGS.

(Taken daily at 5.30 a.m. by Steward's Instruments.)

THE LANCET OFFICE, April 5th, 1882.

Date	Barometer reduced to Sea Level, and 32° F.	Direction of Wind	Dry Bulb	Wet Bulb	Solar Radia in Vacuo	Max. Temp Shade	Min. Temp	Rain fall.	Remarks at 8.30 A.M.
Mar. 30	29·68	W.	49	45	..	59	42	..	Bright
,, 31	29·56	N.W.	45	42	..	56	39	·05	Overcast
April 1	29·74	S.E.	48	45	..	60	40	..	Bright
,, 2	29·82	E.	57	51	..	60	42	..	Cloudy
,, 3	29·93	E.	48	46	..	56	43	..	Overcast
,, 4	30·07	E.	49	45	..	57	43	..	Bright
,, 5	30·05	N.E.	47	44	..	51	40	..	Overcast

Medical Diary for the ensuing Week.

Monday, April 10.

ROYAL LONDON OPHTHALMIC HOSPITAL, MOORFIELDS.—Operations, 10½ A.M. each day, and at the same hour.

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL.—Operations, 1½ P.M. each day, and at the same hour.

METROPOLITAN FREE HOSPITAL.—Operations, 2 P.M.

ROYAL ORTHOPÆDIC HOSPITAL.—Operations, 2 P.M.

ST. MARK'S HOSPITAL.—Operations, 2 P.M.; on Tuesday, 9 A.M.

Tuesday, April 11.

GUY'S HOSPITAL.—Operations, 1½ P.M., and on Friday at the same hour

WESTMINSTER HOSPITAL.—Operations, 2 P.M.

WEST LONDON HOSPITAL.—Operations, 2 P.M.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.—3 P.M. Ballot.—3.30 P.M. Sir Henry Thompson, "On a Case of Tumour of the Bladder (in the male) successfully removed through a Perineal Section of the Urethra."—Mr. T. Holmes, "On Wounds of the Thora Vertebralis with Discharge of Cerebro-spinal Fluid."

Wednesday, April 12.

NATIONAL ORTHOPÆDIC HOSPITAL.—Operations, 10 A.M.

MIDDLESEX HOSPITAL.—Operations, 1 P.M.

ST. BARTHOLOMEW'S HOSPITAL.—Operations, 1½ P.M., and on Saturday at the same hour.

ST. THOMAS'S HOSPITAL.—Operations, 1½ P.M., and on Saturday at the same hour.

ST. MARY'S HOSPITAL.—Operations, 1½ P.M.

LONDON HOSPITAL.—Operations, 2 P.M., and on Thursday and Saturday at the same hour.

GREAT NORTHERN HOSPITAL.—Operations, 2 P.M.

SAMARITAN FREE HOSPITAL FOR WOMEN AND CHILDREN.—Operations, 2½ P.M.

UNIVERSITY COLLEGE HOSPITAL.—Operations, 2 P.M., and on Saturday at the same hour.—Skin Department.—1.45 P.M., and on Saturday at 9.15 A.M.

ROYAL MICROSCOPICAL SOCIETY.—8 P.M.

Thursday, April 13.

ST. GEORGE'S HOSPITAL.—Operations, 1 P.M.

ST. BARTHOLOMEW'S HOSPITAL.—1½ P.M. Surgical Consultations.

CHARING-CROSS HOSPITAL.—Operations, 2 P.M.

CENTRAL LONDON OPHTHALMIC HOSPITAL.—Operations, 2 P.M., and on Friday at the same hour.

HOSPITAL FOR WOMEN, SOHO-SQUARE.—Operations, 2 P.M.

NORTH-WEST LONDON HOSPITAL.—Operations, 2½ P.M.

HARVEIAN SOCIETY.—Dr. Mahomed will introduce the subject of "Collective Investigation of Disease."—Mr. Juler, "On the Symptoms, Pathology, and Treatment of Iritis."

Friday, April 14.

ST. GEORGE'S HOSPITAL.—Ophthalmic Operations, 1½ P.M.

ST. THOMAS'S HOSPITAL.—Ophthalmic Operations, 2 P.M.

ROYAL SOUTH LONDON OPHTHALMIC HOSPITAL.—Operations, 2 P.M.

KING'S COLLEGE HOSPITAL.—Operations, 2 P.M.

CLINICAL SOCIETY OF LONDON.—Report of the Committee on Chromidrosis.—Dr. Barlow and Mr. Godlee, "On a Case of Extirpation of the Kidney for Calculous Pyelitis."—Mr. Howard Marsh, "On a Case of Pyelitis; Exploration of the Kidney; Partial Removal; Death from Suppression of Urine."—Mr. Pearce Gould: (1) "On a Case of Spina Bifida cured by Injection of Iodine;" (2) "On a Case of Congenital Intestinal Obstruction."—Dr. de Havilland Hall, "On a Case of Primary Perichondritis of the Larynx."—Dr. C. T. Williams will show a Case of Phthisis which had been treated by Residence at High Altitudes.

Saturday, April 15.

ROYAL FREE HOSPITAL.—Operations, 2 P.M.

Notes, Short Comments, and Answers to Correspondents.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Letters, whether intended for publication or private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe, or recommend practitioners.

Local papers containing reports or news-paragraphs should be marked.

Lectures, original articles, and reports should be written on one side only of the paper.

All communications relating to the editorial business of the journal must be addressed "To the Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *to be addressed "To the Publisher."*

NOTHING NEW UNDER THE SUN.

A Correspondent writes:—A few weeks ago (Jan. 28th, p. 157) you published an annotation on an anatomical curiosity, then exhibiting in London, under the title of "The Elastic-skinned Man." I happened to see the individual last summer on the Continent, and was struck with the peculiarity he exhibited. I was then informed that he had visited most of the leading continental university towns, and had been seen by several eminent professors; and ventured to suggest that he should show himself in England, and, whether in consequence of that suggestion or not, he has recently paid London a visit. But my object in writing is not to speak of that individual so much as to draw your attention to a parallel case that was exhibited 225 years ago, and of which the illustrious John Bell has preserved for us a permanent record in his Principles of Surgery, vol. iii., p. 36, 1815, accompanied by an engraving showing the man drawing up a fold of skin from the front of the chest. Bell is speaking of the distensibility of the skin, with reference to the unlimited growth of tumours, and, in a foot-note, thus describes the case referred to:—"A case entitled by Meek'ren 'Debilitas Extraordinaria Cutis,' has always appeared to me a surprising proof of the degree in which nature has adapted this integument to dilatation and distension without any actual disease or tumour. This young man had the skin, on one side only of his body, so relaxed that he could extend it without pain to any degree. In the year 1657, says Meek'ren, a young man, a Spaniard, named Georgius Albes, about twenty-three years of age, presented himself at an hospital, and was seen by Van Horne, Sylvius, Gulielm. Pyso, and Franc. Vanderwiel, who, grasping with the left hand the skin of the right breast and shoulder, drew it out till it touched his mouth; on taking the skin under the chin with both his hands, he could draw it down like a beard till it touched his breast, or pull it upwards till it covered his face and eyes; or extend it still more till it touched the vertex, or pinching the skin of the knee, he could extend it as he pleased, upwards or downwards, to the length of half a yard. The skin thus extended retracted itself again; but this was only on the right side of the body; it was a disease, and not a trick or capability of extension produced by custom."

A Staff Surgeon.—Major Fergusson is the youngest son of the late Sir William Fergusson, Bart., of King's College.

X. Y. Z.—Yes, there are several clergymen of the Church of England who are Fellows or Members of the Royal College of Surgeons—as Bishop F. T. M'Dougal, the Rev. Henry Arnott, the Rev. C. May Empson, &c.

A Country Fellow.—There are 1210 Fellows of the Royal College of Surgeons, of which number 573 obtained the distinction by examination. The annual election will take place on the first Thursday in July.

A Provincial Teacher.—The following gentlemen constitute the Board of Examiners in Anatomy and Physiology of the Royal College of Surgeons:—Mr. H. Power (St. Bartholomew's), chairman, with Messrs. W. M. Baker and J. Langton (of the same hospital), T. P. Pick (St. George's), W. Rivington and J. M'Carthy (London), B. T. Lowne (Middlesex), R. Bellamy (Charing-cross), and G. F. Yeo (King's College Hospital).

Surgeon-Major Evatt.—We cannot agree with our correspondent that it would be advantageous to station a bearer company of the A. H. Corps in London in connexion with the proposed ambulance establishment. There would not be anything like sufficient employment for the men, and, scattered over the metropolis, as they would necessarily be to make their services useful, it would be impossible to maintain discipline among them. The police, on the other hand, are always within reach in case of an accident occurring, and, with a very moderate amount of training, would be capable of affording efficient aid. The advantage gained by the occasional opportunities of work which the bearer company might have would not at all compensate for the expense of maintaining them in London and the serious drawback of the indiscipline which would probably result.

"MEDICAL PRACTICE IN PIETERMARITZBURG."

To the Editor of THE LANCET.

SIR,—Mr. Wm. Nolan's letter in the last number of THE LANCET will no doubt attract the attention of many young medical men, and they will be led to believe that a rapid fortune may easily be acquired by going to South Africa. Pietermaritzburg may possibly offer some better inducements than other South African towns, but the various places are already overstocked with medical men. The assumption is that, were the inducements sufficient, the doctors at the Cape would long since have taken advantage of the opportunity.

The following extract is from a letter by a very old college friend who has been in that part of the world some time:—"About five years ago there were openings for sober men to make fortunes, but Leach, health officer of London, advertised this fact in THE LANCET, with the result that medical men 'swarm' out here now. There are some placed where a living may be made, but the life is not a pleasant one. It is a one-horsed sort of colony, more Dutch than English. Fees are acquired by travelling over an arid, half-barren country for the best part of your time. The only appointments to be had are called district surgeoncies, with a salary of £75 per annum. These appointments are not to be obtained by an outsider in any good district until he has been some time in the colony; they usually secure the private practice in the neighbourhood. Fees vary from 5*s.* to £1 1*s.*, but most of the income of a practitioner of a district is derived by travelling distances to his patients, at the rate of 10*s.* per hour there and back again. Cost of living cheap in the country for actual necessaries, but dear for anything beyond. A single man can't live much under £300; £400 per annum without stinting. House rent is very high. Honestly, much as I should like to see you out here, I think I should be wrong in encouraging you to come. You know how I am situated as regards private means, consequently if 20,000 doctors started against me it would make little difference; therefore on a pecuniary point you may be sure I am giving advice to the best of my knowledge." The above will give a more practical view than Mr. Nolan's letter.

I am, Sir, your obedient servant,
April 1st, 1882. A SURGEON.

INVAGINATION OF TRANSVERSE COLON.

To the Editor of THE LANCET.

SIR,—The following case is perhaps of sufficient interest to find a place in your journal.

Master D——, aged six and a half, a delicate lad, was running about in perfect health, and, without making any violent exertion, was suddenly seized with severe pain in his stomach, lasting a short time, and returning at intervals, causing him to scream with intense pain. This condition had lasted about four hours when I saw him. His bowels had acted once, the motion being only blood and mucus, and he had vomited three times. He lay on his back with his legs drawn up; skin cool; pulse quiet. A tumour about three inches long occupied the position of the transverse colon. Looking on it as a case of invagination of transverse colon, I immediately injected nearly three pints of warm water as the boy lay on his left side. It caused him some pain, and as soon as the bowel would hold no more, I placed him on the chamber. The entire injection came away deeply tinged with blood, the child expressed himself well, and the tumour was gone. In half an hour he had a natural motion, free from blood. This morning he is well. So rapid and so easy a rescue from extreme danger is worthy of record as showing what may be done by immediate action. A few hours' delay would probably have rendered such means useless.—I remain, Sir, yours truly,

RICHARD PARR, L.K.Q.C.P.I., M.R.C.S.
Atherstone-terrace, Gloucester-road, S.W.,
March 26th, 1882.

TROUVE'S BATTERIES.

To the Editor of THE LANCET.

SIR,—I shall be much obliged if one of your correspondents can inform me where in England Trouve's vulcanite batteries of bisulphate of mercury can be obtained.—I am, Sir, yours very truly,

Eyre-street, Sheffield, April 1st, 1882. SIMEON SNELL.

"HYPERIDROSIS OF PALMS."

To the Editor of THE LANCET.

SIR,—I recommend your correspondent, "Anxiety," to try the effect of frequently washing the palms with saturated aqueous solution of boracic acid.

I am, Sir, yours, &c.,
Queen Anne-street, Cavendish-square, W., G. THIN, M.D.
March 31st, 1882.

REMOVAL OF SUPERFLUOUS HAIRS.

DR. GEORGE H. FOX, of New York, recommends the employment of electrolysis for the permanent removal of superfluous hairs. To the negative wire of an ordinary galvanic battery a fine needle is attached for introduction into the hair-follicle. He advises the non-removal of the hair until it has become loosened by electrolysis, and that not more than from thirty to fifty hairs be extracted at a sitting.

INSANITARY CONDITION OF ITALIAN TOWNS.

To the Editor of THE LANCET.

SIR,—Looking through THE LANCET of Dec. 24th last I came upon an Italian review of the London Medical Congress, in which the writer alludes to the way in which the Italians should set to work when it becomes Italy's turn to hold such a congress. I hope for the sake of Italy and of her future guests that it will be a long time before her turn comes round, for she has much to do in the meantime; and it is not genius, nor research, nor practical aim which is required, but the application of the knowledge of hygiene and public health already within the reach of everyone who can read. I spent last month in Rome and Florence, and I am convinced that if the army of science do invade Italy, some of the soldiers will be left dead on the field of battle, and others will only reach home to die of their wounds. A couple of days in Milan gave me the impression that it is far in advance of the southern cities in sanitary respects, but a visit to the Ospedale Maggiore, said to contain 3000 beds, made one think of the dark ages. The surgical wards, it is true, reeked with carbolic acid, but they, with the others, opened directly into the latrines, and the latrines consisted simply of small closets with a hole in the tiled (or stone) floor, and looked and smelt as if a brush round with a stable-broom were the only attempt at cleaning they ever experienced.—I am, Sir, your obedient servant,

March 22nd, 1882. C. J. W.

Mr. Kirby Kittoe.—The office is in Oxford-street, No. 296, where all information may be obtained.

X. Y. X.—1. Yes.—2. No.—3. No.

Food.—We scarcely see how a medical man could accept such a post with dignity or advantage.

Mr. Elliot Clark's (Brighton) letter shall receive attention next week.

Enquirer.—The facts of the case should be forwarded to the Home Secretary.

Mr. Evans.—The announcement was made in our last impression, under the heading "Services."

PUERPERAL EPILEPTIC CONVULSIONS.

To the Editor of THE LANCET.

SIR,—On Dec. 27th, 1881, at 5 A.M., I was called by a midwife to see Mrs. W——, who had been some hours in labour (primipara), and had just taken "a fit." When I saw her the convulsions had passed off; quite sensible; face somewhat puffed; os dilatable and head presenting. While passing a catheter she had a violent attack of convulsions; urine albuminous. I then gave chloroform, and delivered with long forceps; child alive. She had two more fits before delivery. I ordered draughts of chloral hydrate and bromide of potassium, notwithstanding which the fits continued during the day at intervals of one hour and a half. I had arranged so that chloroform was applied whenever a fit came on. Towards evening she lost consciousness. That night she had three fits within the hour, so (at the suggestion of Dr. Charles Hill) I used a subcutaneous injection of a quarter of a grain of morphia (B.P. solution). No fits for seven hours and a half. I then gave a clyster and passed catheter. No fits during the day. I gave another morphia injection (quarter of a grain) that night. No return of convulsions. Recovered her senses gradually, suckled the child, and made a quick recovery.

I am induced to record this case, not having seen reported in THE LANCET any cases supporting those mentioned by Dr. S. Maberly-Smith in THE LANCET, July 16th, 1881, page 96. There is no doubt that the hypodermic injection saved this woman's life, and I should certainly try the same treatment in the next case of uncomplicated puerperal epileptic convulsions as soon as possible.

I am, Sir, yours, &c.,

S. ADAMS LUCAS, L.R.C.P. Ed.

Boundary-street, Liverpool, March 24th, 1882.

CIVIL SURGEONS IN MILITARY CHARGE.

To the Editor of THE LANCET.

SIR,—As a perusal of the Medical Directory shows that a large number of civil surgeons are now in charge of military depôts, detachments, and recruiting districts, I suggest that a requisition be made to the War Secretary to grant them some simple uniform to mark their association with those under their care; and, through THE LANCET, I invite the opinion of others upon the subject.—I am, Sir, yours, &c.,

March, 1882. CIVIL SURGEON.

*** We do not think that our correspondent's suggestion, if carried out, would be generally acceptable to the gentlemen employed. It would, we fear, be looked upon by the profession as suspiciously like an advertisement.—ED. L.

SEATS FOR SHOPWOMEN.

IN New York a law now exists by which employers are required to provide seats for their female *employées*, and the *Philadelphia Medical Times* states that proceedings have been taken against several large firms in that city to enforce the law.

Mr. Monteith Haward.—The paper is not worth notice.

THE EX-ZULU KING.

To the Editor of THE LANCET.

SIR,—As Ketchwayo will, according to present arrangements, shortly visit England, the following brief remarks about him may not be uninteresting. While Ketchwayo had the greatest contempt for the witch doctors and medicine men of his own country beyond whom he made them subservient to his political schemes, he possessed the highest appreciation of and respect for European medical men. Whilst he reigned he was attended at Ulundi by a Norwegian physician, who was located as a medical missionary in that neighbourhood, and he would also send to Natal for an English surgeon. I was informed by this latter gentleman that he was most hospitably treated at Ulundi, and that, besides attending to the ailments of the king, he also directed attention to those of his wives. Ketchwayo was no niggard on these occasions, and, by way of fee, put his hand into a large bag of English gold which he possessed, and taking out a handful of sovereigns at random, presented them to him. I recently paid a visit to the ex-King at his residence near Capetown, where he is still a State prisoner. I found him by no means the rude savage he has been represented, but a man with a pleasant expression of countenance, a well developed cranium, of polished—even gentlemanly—manners, and, as I have often been given to understand by Europeans resident in Zululand, possessing naturally a most retentive memory and vigorous intellect. When he heard that I had been the principal medical officer of Fort Ekowe during the time that his army had so closely invested it, he became most cordial, and put many searching questions to me about that fortress. Among other things he asked, "Why we did not come out and fight him?" I told him that we had by far too many sick to attempt it, at which he became palpably much concerned, and at the close of the interview expressed a hope that "all the sick men at Ekowe had recovered." I stated that the great majority had done so, which seemed to afford him great satisfaction. In this connexion I may perhaps mention the following, which, as it fully justifies the action taken at the time, may not be uninteresting. It may be remembered that on one occasion two Zulu envoys were sent to Fort Ekowe to inquire from the King (1) why we were making war upon him; (2) to grant us, under certain mild conditions, permission to return unmolested to the Tugela. Both these men were made prisoners, which act appeared, judging from some English newspapers of that time, to have caused some dissatisfaction at home. I accordingly inquired of the king if he would really have permitted us to proceed quietly to the Tugela. He answered that he had only sent the first part of the message, and had never before heard of the second, which must have been a device of his generals, and had we attempted it we should most certainly have been attacked. I may mention that when I left him, after an interview of some two hours, he shook hands most warmly, saying that he would look at me well so as to remember me, and if he should ever return to his kingdom and I would come and see him, I should receive a hearty welcome.

My object in writing this letter is to show the regard the King entertains for medical men, and I think that it would highly interest him and be productive of immense good should he ever again be restored to his country, if, during his visit to England, he were conducted over some of our largest London hospitals, the Museum of the Royal College of Surgeons, and other of our great medical institutions.

I am, Sir, yours faithfully,

HENRY F. NORBURY, Fleet Surgeon, R.N.

R.N. Hospital, Cape of Good Hope, Feb. 1882.

Midwife.—The King and Queen's College of Physicians in Ireland gives female candidates a licence to practise as midwives and nurse tenders. See Medical Directory, page 1156; or write to the Secretary of the College.

Dr. Buchanan Baxter is thanked.

Mr. E. M. Shirtliff.—The rule is that the obstetric fee covers attendance afterwards, provided that all goes on smoothly; but if exceptional illness arise, and special attendance become necessary, the practitioner is clearly entitled to charge specially for it. Our correspondent's charges seem most reasonable.

FLOWERS IN SITTING AND BEDROOMS.

To the Editor of THE LANCET.

SIR,—I shall be much obliged if any of your readers will give me information upon the following interesting important points:—1. What is the effect of cut flowers upon the air of a room not well ventilated? 2. Do growing plants have the same effect, and are they equally injurious? 3. Is there any simple means by which we can test the impurity of the air thus poisoned? 4. Would such air be likely to cause an invalid confined to the room by bronchitis to also suffer from sickness and derangement of the stomach.—I am, Sir, yours truly,

April 1st, 1882. A. M.

"TWINS."

To the Editor of THE LANCET.

SIR,—In reply to your correspondent, "Medicus," I may say that I am personally acquainted with a lady who had twins four times. They are all living, and grown up. One pair (two females) are married, and both have families. Another pair (two males) are married; one has a family, the other is only recently married. Another family, connected with the above by marriage, has one pair of twins in it (a male and a female). They are both married, and both have families. I am acquainted with a third family, in which there are two pairs of twins (two males and two females). Three of them are married, and have families; the fourth one grew up, but died unmarried. I know a fourth family, in which there are two pairs of twins (two males and two females). They are all married, and they all have families. I knew of twins (a brother and sister) lately resident in Glasgow. Both were married, and both had families. The present Lady C——, daughter of the late Mr. B——, of G——, has had one child; her twin sister, who lives a short distance from the residence of the writer of this note, has a family.

If your correspondent will look back to the time of "the world's grey dawn," he will find it recorded that Isaac, the son of Abraham, had twin sons, Esau and Jacob; Esau had five sons, Jacob had twelve sons and one daughter. Judah, one of the sons of Jacob, had twin sons, Pharez and Zarah; Pharez had two sons, Zarah had five sons.

Thus it appears to be no modern arrangement for twins to grow up and have families. The fact can be traced back at least to about 1800 B.C.

I am, Sir, yours sincerely,
April 3rd, 1882. M.B.

To the Editor of THE LANCET.

SIR,—In accordance with the request of "Medicus," I beg to state the following facts:—K. S—— and K. O——, twin sisters, have four and two children respectively; I. E—— and L. E——, twin brothers, have five and eleven children respectively; and F. A—— and F. M——, twin brother and sister, have had four and nine children respectively. All these cases are well known in my district, and sufficiently disprove the popular notion of the infecundity of twins.—I am, Sir, yours, &c.,
East Rudham, April 2nd, 1882. ALAN REEVE MANBY.

To the Editor of THE LANCET.

SIR,—I can inform your correspondent, "Medicus," in reply to his inquiry, that two lady patients of mine, who are twins, have each had a family of four or five children. I believe, however, the idea generally prevails that of twins one or both are sterile.

I am, Sir, your obedient servant,
High-street, Brentford, April 3rd, 1882. JOSEPH WILLIAMS.

To the Editor of THE LANCET.

SIR,—In answer to "Medicus" in THE LANCET of this week, allow me to state that my own father was one of twins, and we are nine in family My uncle, who was his fellow twin, had a family of eight.

I am, Sir, yours truly,
April 1st, 1882. M.R.C.S.

To the Editor of THE LANCET.

SIR,—In answer to your correspondent, "Medicus," about twins, I beg to say that I am one of twins, the other being a girl, and we both have a family. I am the father of three children; my sister is the mother of eight or nine. We both belong to Bath.

I am, Sir, yours truly,
New Quebec-street, Portman-square, W., JOSEPH WESTON.
April 3rd, 1882.

To the Editor of THE LANCET.

SIR,—In reply to your correspondent, "Medicus," I am very happy to be able to inform him that I have cousins who are twins, one male and the other female, and that each has a family of four boys.

I am, Sir, yours truly,
April 3rd, 1882. A HOPEFUL TWIN.

*** Very many letters on this subject, all to the same effect as the above, have been received.—ED. L.

THE PORTRAIT PICTURE OF THE INTERNATIONAL MEDICAL CONGRESS.

To the Editor of THE LANCET.

SIR,—Whilst thanking you for the exceedingly favourable notice of the picture of this now historical gathering in your last issue, we shall be glad if you will allow us to supply an omission which is of considerable moment to us—viz., that we are the publishers of the said picture. With your permission, we would add that it is open to the inspection of all members of the profession, whether wishing to become subscribers or not.—We have the honour to be, Sir, your obedient servants,

BAILLIÈRE, TINDALL, & COX.
King William-street, Strand, London,
April 5th, 1882.

A COMMUNICATION on Extirpation of the Spleen has reached us from a correspondent who has not appended his name or enclosed his card.

THE necessity of earlier publication this week compels us to defer notice of a number of communications until our next issue.

COMMUNICATIONS, LETTERS, &c., have been received from—Professor Clay, Birmingham; Dr. Thin, London; Mr. Dunnett Spanton, Hanley; Dr. Bridger, London; Mr. Alfred Wright, Romford; Mr. Shirtliff, Kingston; Dr. Meredith, Wellington; Dr. Littlejohn, Edinburgh; Mr. Coppin, London; Mr. Startin, London; Mr. Barraud, London; Mr. Manby, East Rudham; Mr. Henderson, London; Mr. Kelly, Erdington; Messrs. Jones and Barber; Mr. Ashmead, Quarry Bank; Mr. T. F. Chavasse, Birmingham; Dr. Purcell, London; Mr. Collome, Newport; Dr. Sangster, London; Mr. Patten; Mr. J. I. Bowes, Devizes; Mr. J. Thompson, Liverpool; Mr. Hazen Morse, Toronto; Mr. Ringwood, Keils; Mr. Richards, London; Dr. Brookhouse, Nottingham; Mr. Macdona; Mr. Keetley, London; Mr. Percival, Knottingley; Deputy Surgeon-General Moore; Surgeon Hall, Allahabad; Dr. Raymond Rogers, New York; Mr. Jesse; Canon Sapte, Cranleigh; Mr. H. W. Saunders, Cape Town; Dr. Buchanan Baxter, London; Dr. Charteris, Glasgow; Dr. Pollock, London; Mr. Clifford Smith, London; Dr. Brett, Watford; Dr. Blake, London; Dr. Owles, Bournemouth; Mr. Atthill, Faversham; Mr. Hall, Athol St. Peel; Mr. Brear, Bradford; Miss Russwarm, Matlock; Messrs. Curzon and Co., Wednesbury; Mr. Kirkery, South Shields; Mr. Wilson, Dundee; Mr. M'Donald, Manchester; Dr. Needham, Gloucester; Dr. Turner, Manchester; Dr. Thompson, Bilsworth; Messrs. Swears and Co., London; Mr. Birchall, Liverpool; Dr. Skerritt, Bristol; Dr. Davey, Bristol; Mr. Lee Good, Norwich; Dr. Spence, Lichfield; Dr. Prior, St. Albans; Mr. Norman, Cheltenham; Mr. Joy Jeffries, Boston, U.S.A.; Mr. Abbott, Braintree; Dr. Guppy, Falmouth; Mr. Wickham Barnes; Mr. Langford, London; Dr. Finlay, London; Dr. J. B. Gill, Canterbury; Mr. Hormasdji, Cheltenham; Mr. Brumell, Sevenoaks; Dr. Gorrequer Griffith; An Innocent at Home; Enquirer; L.R.C.P. Ed.; S. H., Manchester; Civil Surgeon; Food; Socrates; A Surgeon; M.B.; M. W. C., M.D.; Spes; Medicus, Co. Tyrone; &c., &c.

LETTERS, *each with enclosure*, are also acknowledged from—Mr. Foulis, Derby; Mr. Rowlands, Towyn; Mr. Glover, Dorrington; Mr. Gill, Kendal; Mr. Williams, Sunderland; Mr. Jackson, Sheffield; Mr. Bay, Pill; Mr. Williams, Oxford; Mr. Hoarder, Newton'Abbott; Dr. Oliver, Boston, U.S.A.; Mr. Folland; Mr. Epworth, Ventersburg, S. Africa; Mr. Ritches, Scarborough; Mr. Barty, Dunblane; Messrs. Keith and Co., Edinburgh; Messrs. Foulgers and Co., London; Mr. Horneyblow, London; Mr. Rutter, Hammersmith; W. G. F., Northallerton; A. A.; S. C. P.; S. N., Southport; Alpha, Wandsworth-road; C. R.; W. B.; A. B., Brixton; R. M., Birmingham; C.; Ulna; &c., &c.

Braintree and Booking Advertiser, Freeman's Journal, Manchester Guardian, Weekly Herald, Scotsman, Bath Herald, Bradford Observer, &c., have been received.

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